AMERICAN
GAS JOURNAL

NED DOWN on the Anzio beachhead, American forces ed an urgent S O S for new, low-velocity shells needed to h German defenses. For this new shell a new fuse and booster to be designed and manufactured. Army Ordnance tele- ned Robertshaw. There wasn't time for drawings. One week the new-type shells with new Robertshaw boosters were on way by air transport to Anzio.

t of this story lies a record of Army-Robertshaw teamwork re 1941, making boosters was a slow, watch-maker process. king with Army Ordnance, Robertshaw developed a new production system with the same watch-maker accuracy — ne probably the world's largest manufacturer of boosters.

is one of many stories of wartime achievement which mean rtshaw thermostats will be better than ever, more important ever on tomorrow's ranges.

Even More Than Before **YOU CAN DEPEND ON**

Robertshaw

THERMOSTAT COMPANY

YOUNGWOOD, PENNSYLVANIA

23,000 TEST-YEARS *Prove*

THERE IS ONLY *ONE* PERMAGLAS

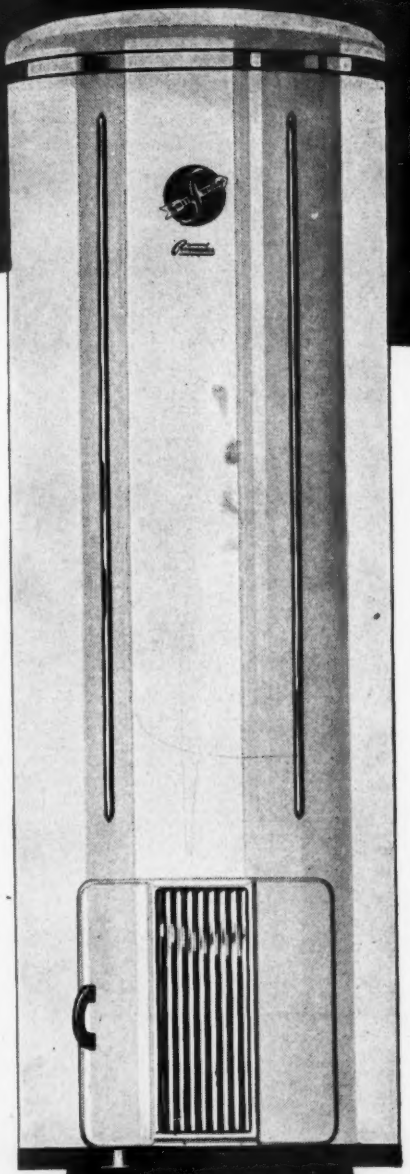
THE equivalent of 23,000 years of metallurgical and ceramics research was required to perfect SMITHway *Permaglas* for water heater tanks. Just "any glass lining" won't do! There is no way to by-pass the time, patience, scientific knowledge and facilities required to develop the ceramics formulae and the metallurgical processes that have made *Permaglas* possible.

Resistance to thousands of water specimens, and a multiplicity of other time-consuming tests starting way back in 1929, continued for eleven long years before we were ready to offer *Permaglas* to the public.

These are the "hidden values" of *Permaglas* . . . reasons why "there is only ONE *Permaglas,*" the sparkling blue, mirror-smooth, glass-fused-to-steel lining that makes *Permaglas* Gas Automatic Storage Water Heaters the easiest to sell, and the best anyone can buy.

Write for "The Inside Story of *Permaglas*". . . a great aid to sales.

"Heated with Gas, Stored in Glass"



SMITH way

A. O. Smith Corporation,
Dept. AGJ145 H

Please send me a copy of "The Inside Story of *Permaglas.*"

Name.....

Title.....

Company Name.....

City and State.....

A. O. SMITH Corporation

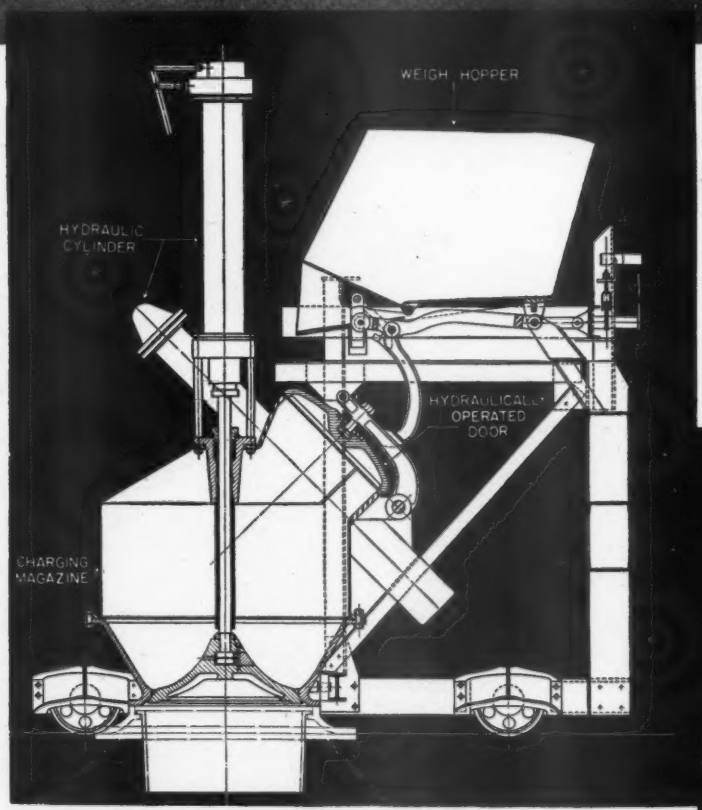
SMITHway *Permaglas*

GLASS LINED

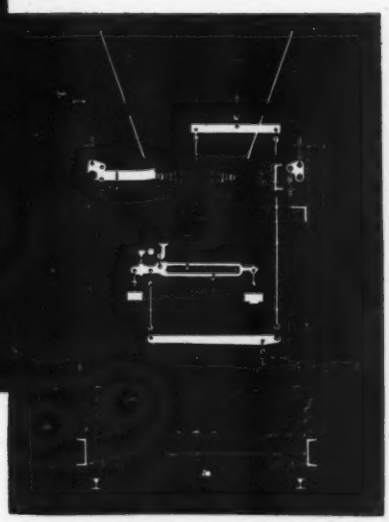
TRADE MARK REG. U. S. PAT. OFF.

GAS WATER HEATERS

SEMET-SOLVAY *Automatic* CHARGING MACHINE



INCREASES CAPACITY *Saves Labor*



At least ten per cent increase in capacity of your water gas machine can be obtained by the addition of a Semet-Solvay Automatic Charging Machine. Part of the increase is obtained by eliminating shut-downs for charging, part from the added efficiency of a fuel bed of constant depth.

The charger refuels the generator once every cycle during the back-run period. Fuel is accurately weighed by a built-in scale and is uniformly distributed by a hydraulically-controlled spreader. A clamping device gives a gas-tight closure between charger and generator. Seating of the doors is cushioned by the hydraulic cylinders.

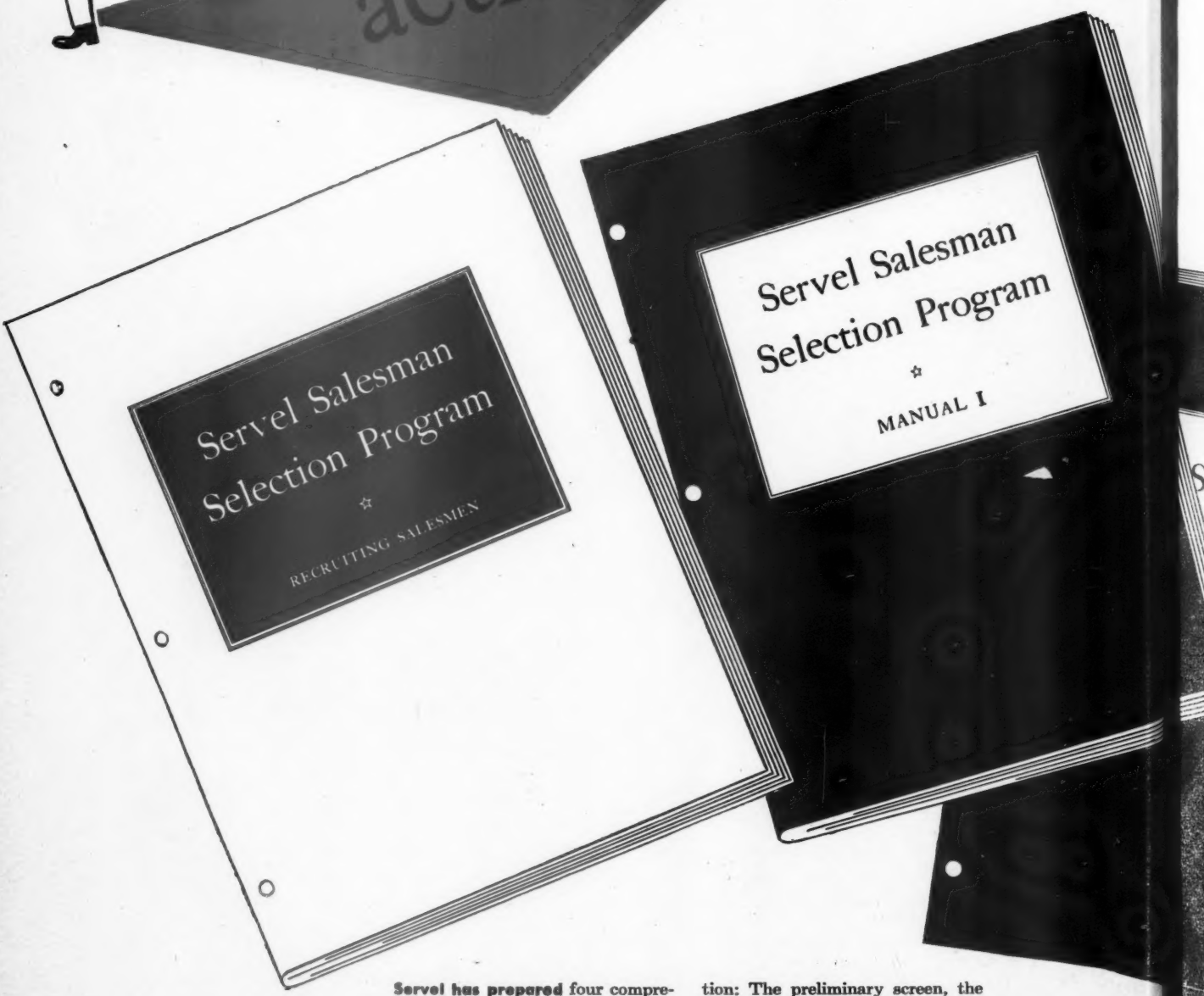
The Semet-Solvay Automatic Charging Machine is built for use with any make of water gas or blue gas machine. Automatic charging is not recommended however when the fuel used is bituminous coal. If you operate on coke or anthracite coal, why not write us for further information and a list of satisfied users.

SEMET-SOLVAY ENGINEERING CORPORATION

40 Rector Street **New York, N. Y.**

AMERICAN GAS JOURNAL, January, 1945. Vol. 162, No. 1. Published monthly by American Gas Journal, Inc., at 34 North Crystal St., East Stroudsburg, Pa. Executive and Editorial offices at 53 Park Place, New York 7, N. Y. Entered as second-class matter, October 7, 1928, at the post

Gas Companies



Servel has prepared four comprehensive text books on salesman selection. "Recruiting Salesmen" brings you a sound five-point program for finding good prospects for your sales organization. The other three manuals take up thoroughly the following steps in salesman selection: The preliminary screen, the weighted application, the telephone or personal checkup, and the patterned interview.

A complete set of these manuals will be given to each man attending Servel's Salesman Selection Program Courses.

s from Coast to Coast*. . .

SIGN UP FOR SERVEL'S SALESMAN SELECTION COURSE

There's plenty of money waiting to be spent after the war. But economists and merchandising men have warned business that there will be plenty of competition for this money. They warn that because of the flood of products on the post-war market, *people will still have to be sold.*

This will be especially true in the home appliance field. That's why far-sighted gas companies are doing everything they can—now—to be prepared. That's why gas companies from coast-to-coast are signing up for the A. G. A. Program.

This program is the first part of the 4-step program developed by the A.G.A. Committee on Selection and Training of Sales Personnel. Servel prepared the course, but the committee recognized it as an outstanding contribution—accepted it—and incorporated it into their program.

The course is tailor-made for the Gas Industry. It is based on a survey of over 50 gas operating companies in which the records of over 1,000 gas appliance salesmen were studied, tabulated and analyzed.

From this mass of information, Dr. McMurry, an authority on sales personnel, who is Servel's consultant, developed a plan for selecting gas appliance salesmen. It is a down-to-earth plan to help you select hard-hitting salesmen.

Attend these courses!

To enable you to benefit to the fullest from this course, Servel is conducting two-day training classes in every section of the country. Your sales executives will be asked to attend these meetings so that they'll be ready to train the rest of your organization when the time comes to get back into sales again.

If you have not signed up for this course, ask your Servel regional or district manager to enroll you today! Or write to Servel, Inc., Advertising and Sales Promotion Department, Evansville 20, Indiana.

**Meetings on Pacific coast are being planned for after the first of the year.*

Servel, Inc.

EVANSVILLE 20, INDIANA

FOR MAXIMUM YIELDS OF
HIGH BTU GAS AND MERCHANTABLE COKE
PITTSBURGH COAL CO
CHAMPION COAL
PITTSBURGH, PA
Champion Coal
CONTINUOUSLY SERVING THE INDUSTRY
FOR HALF-A-CENTURY
PITTSBURGH COAL COMPANY
General Offices: OLIVER BUILDING · PITTSBURGH, PA.
Cleveland, O.; Sault Ste. Marie, Mich.; Buffalo, N. Y.; Utica, N. Y.; New York City; Philadelphia, Pa.; Youngstown, O.
PITTSBURGH COAL CO., LTD., London, Ont., Hamilton, Ont., Toronto, Ont., Windsor, Ont.
PITTSBURGH COAL CO. of Wisconsin, Duluth, Superior, Minneapolis, St. Paul · MILWAUKEE WESTERN FUEL CO., Milwaukee, Wisconsin

JAN 7 1945

VOLUME 162
NUMBER 1

AMERICAN GAS JOURNAL

ESTABLISHED 1859

WHOLE
NUMBER 3851

JANUARY 1945

qc 665.705
A51
v.162-163
1945

PUBLISHED MONTHLY BY
AMERICAN GAS JOURNAL, Inc.
53 Park Place, New York 7

S. G. KRAKE, *President and Treasurer*

M. E. KELLEHER, *Secretary*

A. I. PHILLIPS, *Consulting Editor*

H. T. MATTHEW, *Business Manager*

JAMES C. MUNN, *Midwest Representative*
10515 Wilbur Ave., Cleveland 6, Ohio
Tel. Sweetbrier 0052

CONTENTS

Survey of the Gas Industry During 1944—J. French Robinson 9

Utility Rates Under War Conditions—Fred A. Herr 13

Second Managers Conference, N.E.G.A. 17

Postwar Industrial Gas—J. E. Bullard 19

Field Testing and Maintenance of Large Capacity Displacement Meters—T. G. Kimball 23

Battles Are Won by Well Trained Troops—R. E. Williams... 25

Review 1944 Higher Court Gas Law Suits—Leo T. Parker 28

Sales and Advertising Policies for the Gas Industry—O. R. Doerr 32

Chart Gives Cylindrical Areas—W. F. Schaphorst 38

Holder Heating at Adams, Mass.—H. V. McSheen 39

News of the Gas Industry 42

Book Review 50

Copyright, 1945, American Gas Journal, Inc.

Subscription $2.00 per year U.S.A.; $3.00 Canada; $4.00 Foreign. Single copies, 25 cts.

Central - Adult
v.162-163 Cop. 1

Ordering Your Right Valve today calls for a lot of "Know-How"...

THE PROBLEM

1

With valve materials on the "critical" list, your valve should contain the minimum of material essential to its purpose. In other words, exactly the correct size and type should be selected.

2

Mistakes in specifying valves can prove costly both to you and the war effort. And servicing or replacements to cover such mistakes become more and more difficult.

3

The war "turnover" in Purchasing, Engineering, and Maintenance personnel may have taken some of your valve experts.

A SOLUTION

1

To make sure, our Engineering Department will gladly check your valve specifications, if you will indicate carefully the proposed application.

2

The **RELIANCE** line of regulators is complete . . . for the control of all volumes, all pressures, all differentials . . . for a wide variety of gases and liquids. You need order no makeshift size or type.

3

RELIANCE regulators have an unsurpassed performance record in positive action, strength and durability, mechanical adaptability . . . **MAINTAINED SAFETY** . . . in domestic, commercial or industrial service. A maximum service return upon your investment.

ANOTHER CONSTRUCTIVE SUGGESTION . . . Build up a permanent and authoritative reference file on regulators, for the benefit of newcomers on your staff.

For example, write for copies of our new **BULLETIN** 49. It gives complete details on a typical assortment of Relief Valves, Differential Valves, Back Pressure Valves, Pressure Limiting Valves. (Types "RV", "RV200" and "RV201", "ASO", "HPR", "CBV" and "CBVA", "DV200" and "DV201", "PLV.")

Included are valves for safeguarding consumers' service . . . valves for protecting meters, pumps, other valves, transmission lines . . . valves for flow control in various inlet and outlet differentials. They are valves with specialized functions; are of advanced engineering design, and incorporate many original features. All afford easy maintenance.

RELIANCE
REGULATOR CORPORATION
ALHAMBRA, CALIFORNIA

1969

AMERICAN METER COMPANY
ESTABLISHED 1836
PACIFIC METER WORKS · LOS ANGELES · SAN FRANCISCO

JANUARY
1945

AMERICAN GAS JOURNAL

VOLUME 162
NO. 1

Survey Of The Gas Industry During 1944

By
J. French Robinson,
President, American Gas Association
and
President, The East Ohio Gas Company,
Cleveland, Ohio

"The gas industry has operated at high efficiency within the limits of numerous governmental restrictions and has accepted and successfully discharged its responsibility for the conservation of critical resources."

ALTHOUGH 1944 was a year of continued adjustment to an economy of war, the gas industry took stock, scanned its markets and formulated plans for the future. Noticeable throughout the industry was a determined effort to improve the economics of its operations and to expand certain basic activities so that the benefits of gas service may be realized to the fullest extent possible on the domestic, commercial and industrial fronts.

Statistical Summary

At the end of 1944, 19,775,000 customers, the largest number ever connected to the mains of the industry, were being served with gas. This was an increase of 2.0 per cent over the year 1943. Of this total, manufactured and mixed gas companies were serving 10,634,000 customers while 9,141,000 were served by natural gas companies.

Revenues of the entire industry aggregated $1,130,366,000, an increase of 5.7 per cent over 1943. Natural gas companies grossed $682,738,000, a gain of 6.1 per cent, whereas manufactured and mixed gas companies grossed $447,628,000, 5.1 per cent more than for 1943.

Industrial and commercial sales of natural gas increased by 52,664,000,000 cubic feet during the year, bringing total sales for 1944 to 1,182,544,000,000 cubic feet. This was a percentage increase of 4.7. Sales of manufactured and mixed gas for industrial and commercial purposes were 176,423,000,000 cubic feet, 5.2 per cent greater than for the previous year.

In the household uses of gas, such as cooking, refrigeration, house heating, water heating, etc., manufactured and mixed gas companies sold 306,765,000,000 cubic feet, a gain of 4.5 per cent. Gas consumed for house heating increased approximately 1.2 per cent. Sales of natural gas for domestic uses were 567,417,000,000 cubic feet, an increase of 10.6 per cent.

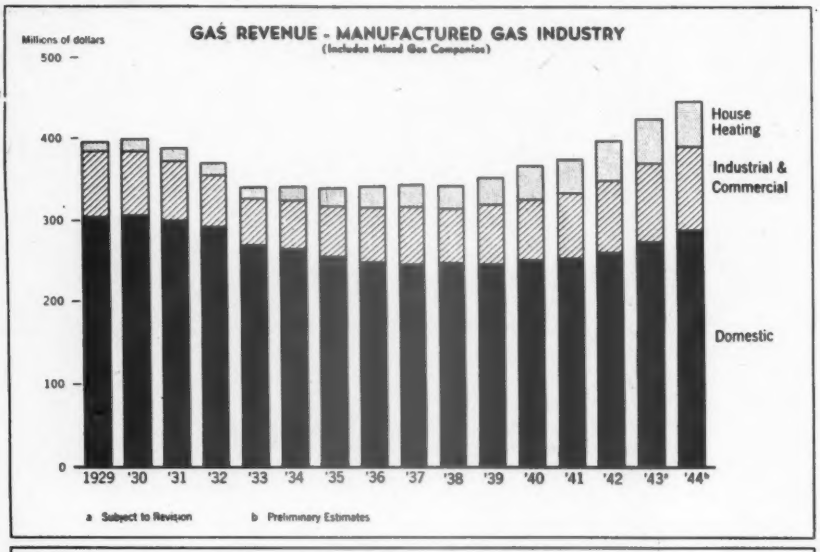
Indications are that the marketed production of natural gas in 1944, including amounts used in the manufacture of carbon black and for field purposes, will reach approximately three and two-thirds trillion cubic feet.

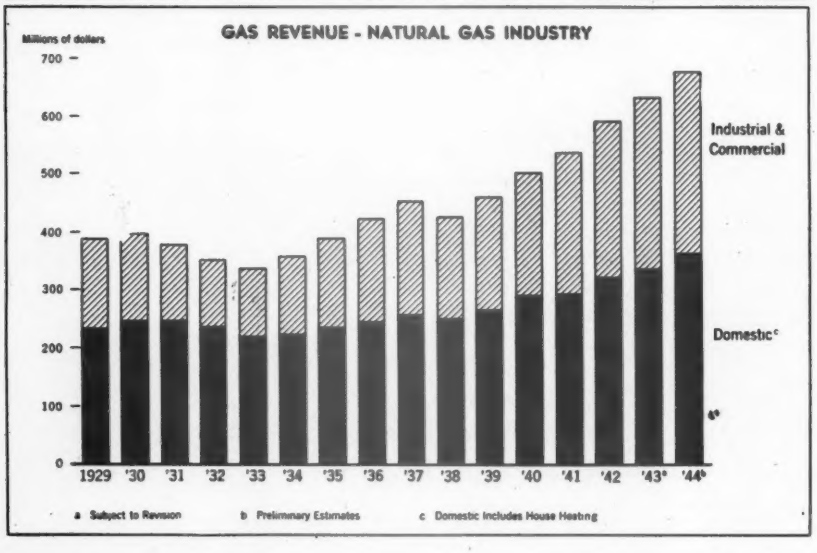
$1,400,000 Program Approved

The outstanding development of the year was a thorough analysis of the industry and its varied problems made by the Post-War Planning Committee of the American Gas Association. This resulted in a plan adopted by the Association's Executive Board to carry out the committee's recommendations as to increased research, national advertising and general sales promotion calling for an expenditure of $1,400,000 annually for three years. At year end, subscriptions to this fund were mounting rapidly.

Accelerated Research

The year 1944 proved to be one of outstanding accomplishment for the Association's Testing Laboratories in Cleveland and Los Angeles. Ap-





propriations for research were nearly three times higher than the annual average for the nine-year period from 1934 to 1942.

Although the major operating functions of the Laboratories continued to be development, design, engineering and testing of special war products for the War and Navy Departments and such Federal agencies as the Office of Scientific Research and Development, proper organization made it possible to inaugurate and carry out at the same time the most extensive fundamental research program in the industry's history.

The accelerated research program contributed a wealth of material to design literature for the use of the industry. A solid foundation in domestic gas research was acquired for the future development of gas appliances to meet the demands of modern consumer markets.

Experimental development of a 100% primary air burner provided much fundamental data of wide interest, and while research is still in progress it is expected that smooth top range styling will be the eventual result of this new burner. Single point flash tube ignition for oven and broiler burners is another important development completed for practical application.

Special procedures were worked out successfully for testing gas appliances for use in sections of the country where high altitudes prevail. Exhaustive investigation and studies on domestic gas ranges, water heaters, space heaters and central heating appliances were worked out by the Laboratories and the National Bureau of Standards, Washington, D. C. The new approval requirements, when adopted, should benefit approximately 1,200,000 customers served by natural gas or by manufactured gas who live at elevations from 2000 to 7000 feet in the Rocky Mountain area.

With gas the predominant fuel in numerous housing projects constructed in all sections of the country, installation inspections rose to the highest in the Laboratories' history. Nearly 10,000 such visits were made during the year, many at the special request of government agencies.

Now completing its fourth year of operation, the Institute of Gas Technology is continuing its basic research activities without interruption. Two major projects in the field of gasification are attracting increasing interest. One involves the use of a highly superheated steam and fluidized pulverized coal. The other concerns a continuous gasification system under pressure using "atomized" coal produced by the Institute's newly developed coal pulverizer.

Natural Gas

During the year the natural gas industry met ever-increasing demands with a minimum use of men and materials.

The gas line from Texas to West Virginia (of the Tennessee Gas and Transmission Company) started operating in October and is delivering more than 200 million cubic feet of gas per day into the highly industrialized area in the Appalachian region, relieving a threatened gas shortage in that area.

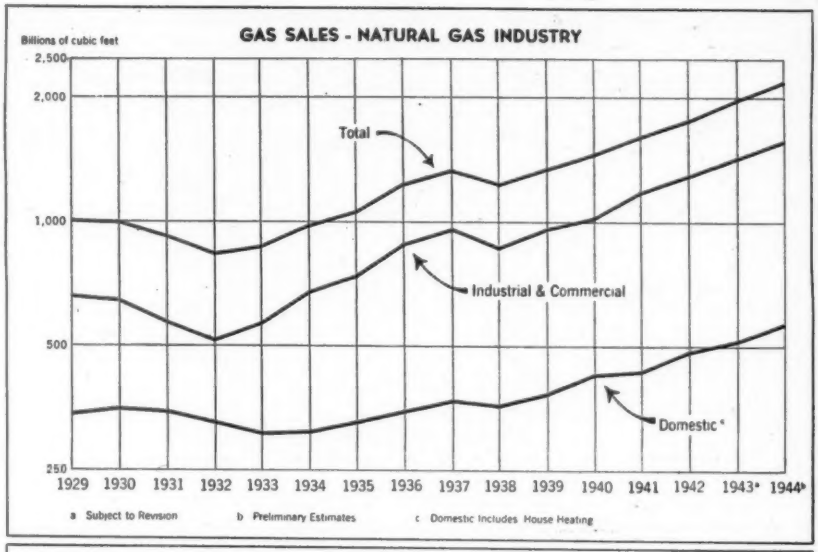
A pipe line is being projected from Texas to California to supplement the natural gas supply to that state. A line in excess of 24 inches in diameter and 1000 miles long is contemplated for construction in 1945. Many looping projects have been constructed during the year to increase transmission facilities and augment the supply.

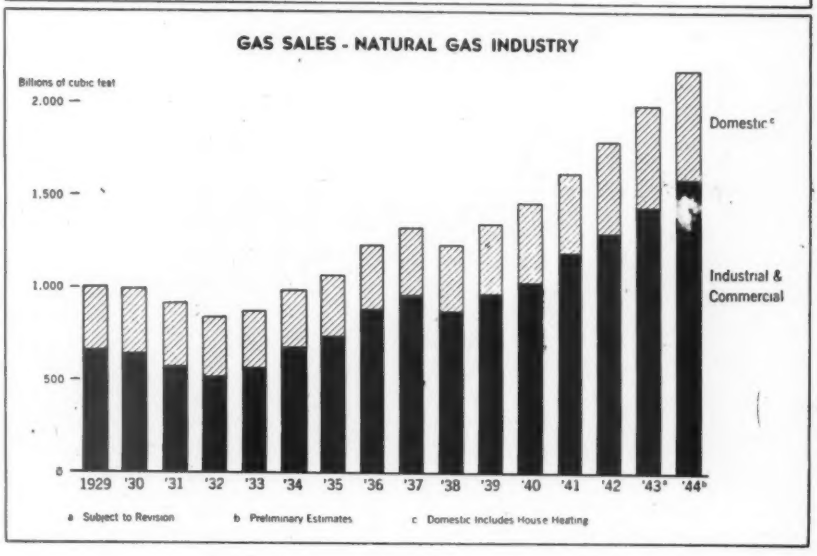
In addition to expansion of facilities, the industry has been mindful of its obligations in research and technical development. Important strides have been made in the further use of natural gas as a chemical agent and in its use for driving the gas turbine as a source of primary power. Substantial advances also have been made in the improvement of storage facilities and methods for storing natural gas in the ground.

Gas Kitchens of the Future

Inauguration of an industry-wide kitchen planning program sought for the first time to coordinate the efforts of manufacturers of kitchen cabinets with those of manufacturers of gas appliances to achieve unity of type, size and design. This cooperative plan is now in effect and has won the interest of related industries such as steel, glass, plastics, linoleum and others.

By means of such allied cooperation the gas industry proposes to simplify the acquisition of strictly modern gas kitchens for millions of homemakers. Gas utility companies generally have indicated their intention to promote such kitchens and the name "New Freedom Gas Kitchen" will be used extensively in national advertising scheduled for early in 1945.





National Advertising Developments

A change of pace in consumer advertising for the first six months of 1945 will consist of two closely integrated campaigns. One will feature the latest developments and trends in kitchen planning, spotlighting a certified performance gas range, a gas refrigerator and an automatic gas water heater. Magazines with a circulation in excess of 18,500,000 will be used. The second campaign will give separate featuring to gas house heating and year-round air conditioning. Magazines having a circulation of 8,430,716 will be used.

An enlarged national campaign of industrial and commercial advertising was initiated in September, 1944, in trade, technical and business magazines. Nineteen publications carrying this advertising reach many varied fields and cover the food industries where gas is widely used in processing, the chemical and metallurgical fields where new development is constantly going on with many new opportunities for gas; the school fields and the general industrial field as well as business media.

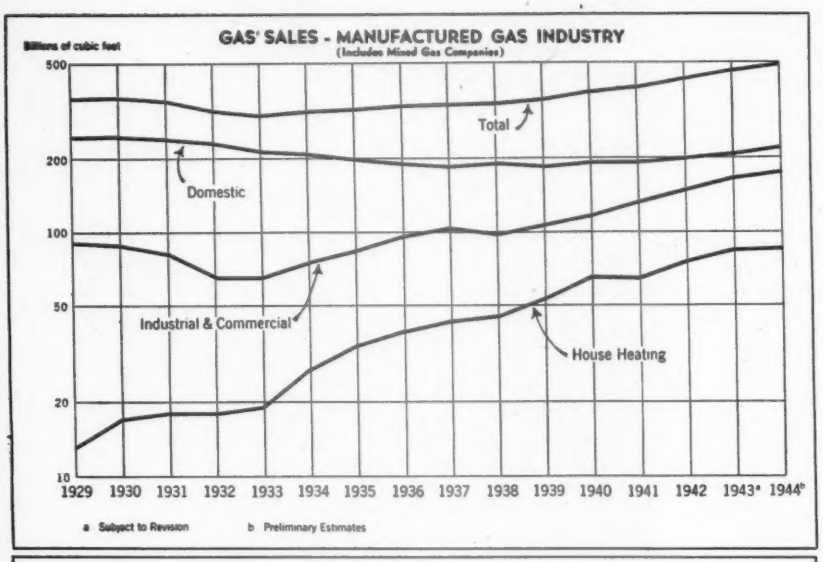
Gas Fuel and War Materiel

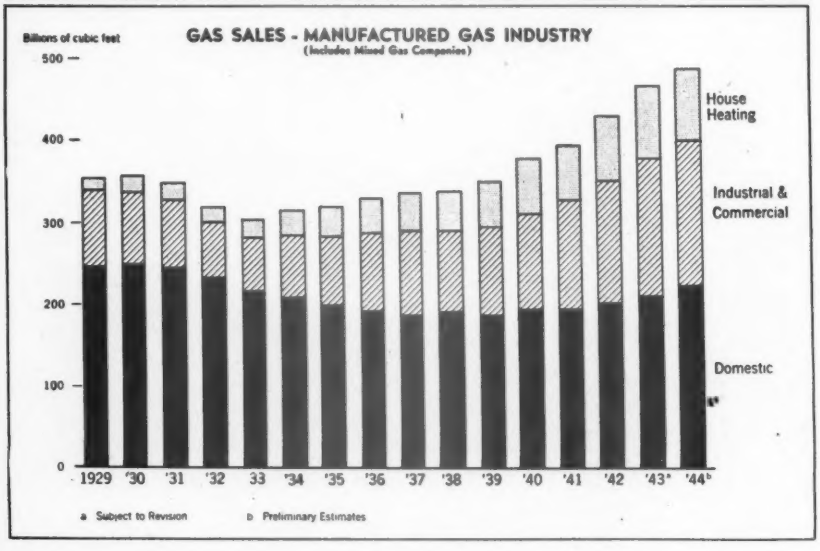
Gas fuel for industrial heating purposes continues to be used at peak levels with some shifting as demands for various munitions and war products themselves change from time to time. Thus airplane production in certain classes has been reduced because losses have been less than anticipated, and consequently there have been certain cut-backs in such plants. Contrariwise, demand for heavy ammunition and guns has increased to such an extent that peaks of industrial gas demands have again reached new heights.

The magnitude of operations for war is so great today that it is natural to look first at those applications of gas which are, in themselves, large and striking. However, it is not only the big jobs which demand attention, but the many small ones as well, particularly when they lead to improvements in process or quality or permit reductions in cost of manufacture or accelerate speed of production.

To cite an example, equipment competitive to the gas industry produced excellent results in speedier heat treatment of various items such as shell noses, gears, etc., and this led to a research program which has now culminated in the direction of high-speed gas heating units that not only duplicate but exceed the performance previously reported in these important fields. In fact, so rapid has heating become that it will be necessary to change standards of performance published in guides and handbooks which, in many cases, intimated that metals could not tolerate, without cracking, heating speeds now accepted as commonplace.

The significance of such achievements is not merely measured in terms of greater war output or lower cost of munitions. It must be analyzed in terms of eventual civilian use, and it requires no great stretch of the imagination to appreciate how faster speeds, lower costs, and far better metallurgical control will be of prime importance in the production





of automobiles, refrigerators, radios, and the other peace-time goods now unavailable. Thus, the gas industry not only has pioneered radical changes in methods of manufacture of a wide variety of parts but is also laying the foundation for permanent industrial gas loads in the future.

The urgency of war needs has sometimes led to the adoption of the most available fast procedures, even in the sacrifice of production costs and without regard to the investment required. Fortunately, this situation does not arise very easily in the case of industrial gas equipment which has the necessary flexibility to permit its conversion to peace use at a minimum expense, after which the economic advantage and flexibility of gas use will be immediately available to civilian production.

Heating parts undergoing treatment by means of hot air up to 1000°F. in socalled "convection" furnaces have been common practice in the past, but today this field has been extended to temperatures as high as 1750°F. This represents heats which formerly were thought to be the exclusive field of radiant heat transfer, but the great strides made in metals which can withstand high temperatures make possible the extension of air heaters. Similar progress in metals has brought to the foreground the ultimate economies obtainable by gas combustion turbines, and these have been widely discussed by technical sources during the year.

The quenching of metals after heat treatment in oil and water is common knowledge, but today the use of special gas atmospheres discharging from high velocity gas jets as a means for controlled quenching for superior properties is a rapidly growing innovation and a new field of usefulness for gas. In an analogous manner, gas fuel has been applied to the pickling of steel, eliminating the older acid baths and carrying out the entire process in a dry gas atmosphere.

Industry has generally taken advantage of war needs to modernize production equipment to such an extent that the termination of World War II will see American industry equipped with the latest and best means of production of any available in the world today. The gas industry is justifiably proud of the many contributions it has made toward the achievement of this goal, for upon the industrial gas furnaces, ovens, melters, and similar equipment rest the superior performance and quality of American war equipment.

Home Service Activities

During the year, the Home Service Division of the gas industry continued its active promotion of the war-time programs of nutrition and food conservation. In thousands of towns and cities in the United States and Canada, Government programs of food, fuel and appliance conservation have been explained through demonstrations, information centers and home calls. In recognition of this effort the War Food Administration recently paid tribute in letters to gas companies, expressing appreciation for the support given the war-time food programs.

Approximately twelve million customer contacts were made during the year by Home Service personnel. Special attention has been devoted to "Programs for Young America," designed to meet the special needs of young people who have been shouldered with the home responsibilities of food choices, marketing and preparation.

In the summer of 1944, customer contacts in food preservation totaled six million, requiring the preparation and distribution of two million canning booklets. From contacts made at demonstrations and lectures, telephone calls and personal conferences in local offices and at canning centers it is estimated that millions of quarts of food have been preserved under the supervision of Home Service Departments of the gas utility companies, thus aiding substantially the cause of national war-time food conservation.

Utility Rates under War Conditions

Interim Ruling of California R. R. Commission

By

Fred A. Herr

IN THE FIRST CASE to reach a decision of several investigations being conducted by the California Railroad Commission to arrive at a sound and equitable basis for utility rate handling under war conditions, the Commission on December 4 issued an interim ruling under which the Southern Counties Gas Co. of Los Angeles was ordered to reduce its rates a total of $750,000 a year for one year, beginning December 15, 1944.

Involved in the case was the controversial issue of whether federal war taxes should be eliminated from operating expenses. This had been proposed by the CRC in June, 1944, when it ordered the company to show cause why interim rates for gas should not be made effective, corresponding to a gross revenue reduction that would result by eliminating, in whole or in part, of Federal war taxes from operating expenses.

Of interest, too, was the manner of adjusting the interim rates as ordered by the CRC, which ruled that the reductions should be accomplished by means of discounts on gas consumers' bills. This method, the CRC decided, would be a quicker and more flexible procedure than a revision of the rate structure, which otherwise would have been necessary to achieve the reduction.

The order (contained in C.R.C. Decision 37521 in Case No. 4716) provided that for meter readings taken on and after December 15, 1944, the Southern Counties Gas Co. shall apply to its presently effective gas rate tariffs war emergency discounts to be in force for a period of 12 months and ending with meter readings taken on December 14, 1945.

Discounts to Customers

The following rate of discounts was specified:

Ten per cent to billing beyond the minimum charge on general service tariffs in the Los Angeles Harbor District. Discount of 7.5% on all firm, industrial and military service in all districts. A 5.8% discount to the wholesale gas service, exclusive of surplus, that Southern Counties Gas Co. supplies to San Diego Gas & Electric Co.

For the Santa Monica district of Los Angeles the ruling provided that, in addition to the 7.5% discount on billings above minimum charge, the present minimum charge of 90c for the first 300 cu. ft. of gas per meter per month of the general service be reduced to 85c. Local conditions prevailing in the Harbor and Santa Monica areas caused the CRC to apply special provisions to those districts.

An analysis of the $750,000 reduction showed that the Southern Counties Gas Co.'s net return will be reduced somewhat less than $136,000 with the balance representing a saving in tax payments.

"This does not mean that there is a dollar of this reduction that the consumers of gas service are not entitled to receive," the Commission stated in a review of the evidence attached to the order. "Very substantial portions of the excess profits tax paid come from other sources than additional revenues from gas sales. For example, the saving in bond interest, which has materially increased excess profit tax payments, is clearly a saving which should rightfully be shared with the Utility's consumers. Any reduction in tax payments because of rate changes, resulting from such savings, is merely a distribution of part of the excess earnings to the users of the service, who are entitled to this relief. In this opinion and order, however, the resulting rates of return and earnings are such that, irrespective of the effect upon taxes, the reduction is fully warranted."

Since the December 4 decision was merely an interim order, the CRC ruled that the case remain open for further hearings, if such be required, with the stipulation that the Commission may, after such hearings and upon further order, continue or change the discounts at the end of the 12 months' period.

Opposes Rate Making Policy

The order was concurred in by three members of the Commission, with two others dissenting.

In a dissenting opinion, Commissioner Ira H. Rowell declared that the CRC is proceeding to translate into a rate reduction a large part of the income taxes which the company is now paying to the federal government. Commissioner Rowell pointed out that the propriety of such action was the subject of the CRC's special inquiry in another case (No. 4731—in which hearings have been held but no decision rendered as yet) involving not only gas companies but utility firms of all types in California.

"After the fullest hearings in that proceeding," Mr. Rowell stated in his dissenting opinion, "there was not offered one iota of testimony leading to the conclusion that the application of such rate making policy in this state would be justified either by good economics or good morals."

The second dissenting opinion was signed by Commissioner Justus F. Craemer who stated he agreed fully with Mr. Rowell's views regarding the treatment of utility taxes.

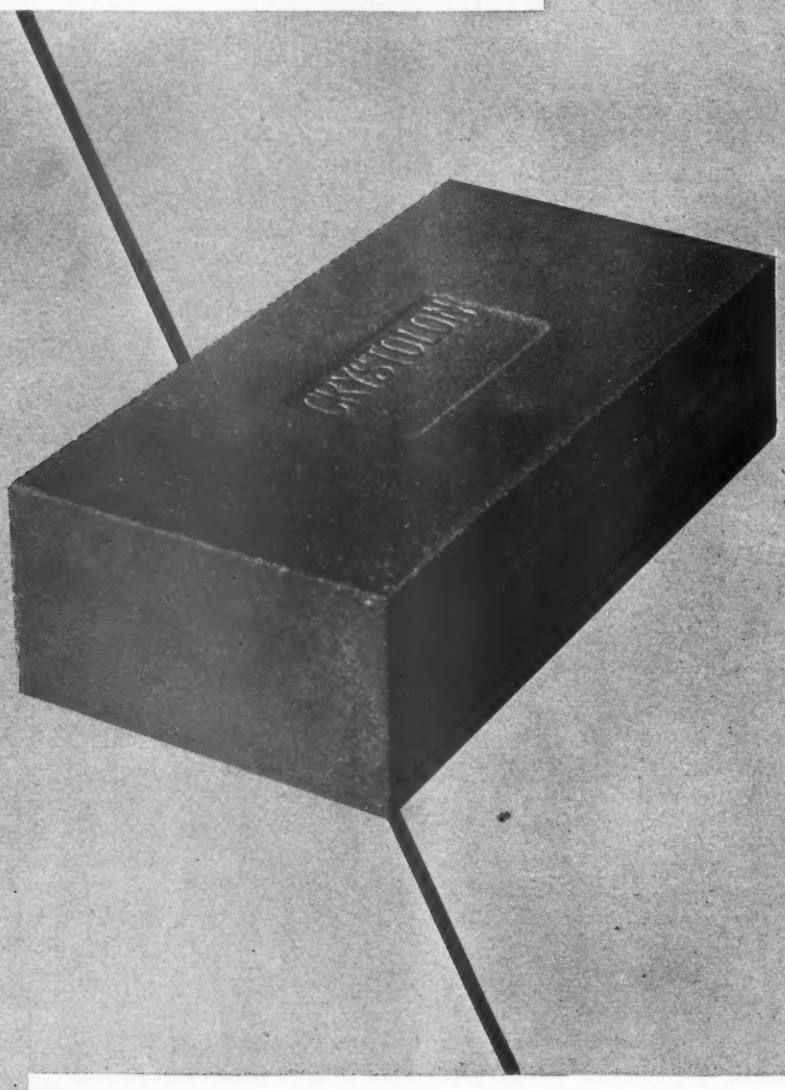
The Southern Counties Gas Co. case was initiated on February 29, 1944, when the Commission on its own motion instituted an investigation into the reasonableness of the rates, charges, rules, regulations and practices of the firm. Hearings were held in Los Angeles June 7, 8 and 9, resulting in the issuance of the show cause order on June 27. A number of hearings were held in the State Building, Los Angeles, during August, but the decision in the case was, by agreement, postponed until hearings in the state-wide case (No. 4731) had been concluded.

For the purpose of the proceeding, federal war taxes were construed to be all federal excess profits taxes and other federal income taxes which are at rates in excess of the highest rates prevailing under Internal Revenue Laws applicable to the years 1936-1939 inclusive.

Appearing at the hearings in behalf of the Southern Counties Gas Co., Loren W. East, consulting engineer, offered rebuttal testimony to the Commission's contention that the high income returns of the company warranted rate reduction. Mr. East stated that all taxes paid, including the excess profits tax, are chargeable to gas operations, since there is no direct comparison, in his opinion, be-

CRYSTOLON BRICK

For Gas Generators



High refractoriness, chemical stability, resistance to abrasion and to slag penetration make CRYSTOLON (SiC) Brick ideal for long, economical service in the generators of gas sets. The dense surface of CRYSTOLON Brick resists slag penetration so that clinkers are easily removed leaving the face of the brick clean and undamaged. This results in long life for the CRYSTOLON lining which often pays for itself the first year by savings in cleaning costs alone.

NORTON COMPANY — WORCESTER 6, MASS.

Norton Longer Lasting **Refractories**

Second Conference of N. E. G. A. Gas Company Managers

THE SECOND of a series of Company Managers Conferences during the present Association year to study the fundamental problems of the New England gas industry, was attended by 53 persons at the Parker House, Boston, on December 1, 1944. President Henry presided at the morning session, with Chairman Rutherford of the Company Managers Conference presiding at the afternoon session.

Chairman R. E. Finnin of the Sales Division, outlined the background for the day's presentations by 7 representatives of the Sales Managers Conference.

Summary of Conference Action

After able presentations by the 7 selected representatives of the Sales Managers Conference and prepared discussions by 7 representatives of the Company Managers Conference together with floor discussions, definite conclusions and recommendations were reached on the 7 factors dealing with the Economics of Sales. These may be briefly summarized as follows:

1. A detailed analysis should be made of market potentialities by each company.

2. The operating report is an unsatisfactory means for evaluating New Business results and a suggested method might well be adopted by the different companies.

3. There is a base minimum New Business expense which a company will have regardless of whether or not it wishes to increase revenues.

4. The revenue life (not physical life) of refrigerators, water heaters and house heaters is at least 10 years. (In other words, a company can safely count on obtaining a minimum of 10 years of revenue from each such appliance which it sells.)

5. The efforts of Home Service personnel, in addition to being effective and valuable in building good public relations and showing customers how to get the most out of their appliances, can be measured by the increased revenues produced through their calls.

6. Sales results are in direct proportion to the number of salesmen employed.

7. Companies that spent above average on New Business showed better net operating revenue gains as well as gains in M.c.f. and gross revenues than companies that spent below average.

Cost Accounting Code Committee

President Henry announced that he had appointed Gordon G. Howie, vice president and general manager of the Cambridge Gas Light Company, as chairman of the Cost Accounting Code Committee. Three representatives from the Operating Division and three representatives from the Accounting Division have been selected to serve with Mr. Howie in this activity.

The purpose of this committee is to develop a uniform code which could be adopted by the New England companies in two particulars: (1) In making an analysis of investment costs to perform certain gas manufacturing functions; and (2) In determining the operating costs to carry out these functions. The ultimate purpose would be to obtain data from each company under the new code and from an analysis of this data to determine those companies with the lowest investment cost or lowest operating cost in carrying out any particular gas-making function.

Economics of Sales Presentations

Seven representatives from the Sales Managers Conference presented facts and recommendations dealing with the seven subjects covered in the Economics of Sales Report of the A.G.A. Post-War Planning Committee. Following each presentation, a company manager gave a prepared discussion of the subject. Following this, floor discussion took place. Finally, each recommendation of the Sales Managers Conference was taken up and revised where desired.

The following constitutes the conclusions and recommendations prepared by the seven Sales Managers Conference representatives, some of the recommendations having been revised by the Company Managers Conferences.

Market Studies

Presented by: E. G. Twohey, Asst. Dist. Mgr., Central District, N. E. P. A., Worcester. Prepared Discussion by: R. E. Ramsay, President, New Haven Gas Light Company.

Conclusions

A market study is essential to the development of a sound sales program.

Recommendations

Complete market surveys should be made by every gas company, such studies to cover as many of the following subjects as each company believes to be of value in its own situation:

1. Complete market surveys, designed to indicate the saturation of various gas appliances and the extent to which the market is supplied by different fuels.

2. These surveys should be repeated at appropriate intervals.

3. M.c.f. and revenue trends by classes and districts indicating where gas consumption is increasing or decreasing.

4. Public opinion surveys.

Evaluating New Business Efforts

Presented by: J. A. Hiller, Sales Manager, Portland Gas Light Company, Prepared Discussion by: D. H. Levan, Pres. & Gen. Mgr., Lowell Gas Light Company.

Conclusions

The operating report is unreliable as the only measure of the New Business results.

Recommendations

1. A detailed study should be made by each company to determine the estimated average gas load and revenue obtainable from appliances on its lines.

2. A tabulation of estimated M.c.f. and revenue gains of appliance sales should be incorporated in each company's accounting procedure.

3. Each company should prepare charts based upon these previously

determined characteristics showing the number of appliance unit sales necessary to obtain a given increase in M.c.f. and revenue per customer per year.

4. Management should determine and assign to the New Business Department the increase in M.c.f. and revenue desired in a given year.

5. Estimated M.c.f. and E.A.R. for specific appliances should be checked from year to year to detect changes in characteristics.

6. A periodic comparison should be made (at least annually) of estimated gains with actual increases.

7. (a) A record of known major load and revenue losses should be maintained and be given due consideration in evaluating New Business results.

(b) Consideration also should be given to the situation which would exist in the absence of New Business efforts to offset such losses.

(c) Management should be constantly on the alert to detect revenue loss trends, the causes of which are not readily apparent.

(d) Facilities should be made available for immediate revenue loss studies when unfavorable trends are first detected so that causes can be determined and corrective measures instituted by the New Business Department.

8. Each company should make studies to determine:

(a) Actual gains vs. estimated gains from extensions.

(b) Actual cost vs. estimated cost of such extensions.

Salesman Power

Presented by: R. E. Wright, Director of Gas Sales, Negea Service Corporation. Prepared Discussion by: E. H. Eacker, Vice President, Boston Consolidated Gas Co.

Conclusions

1. Sales results are in direct proportion to the number of salesmen with due allowance for business conditions and for the point of diminishing return.

2. The amount of estimated annual revenue obtained per salesman year is approximately the same (in a given company) whether a salesman is assigned to 1,500 or 8,000 customers.

3. The fewer the meters per salesman, the larger is the amount of estimated annual revenue that can be realized per meter.

4. The fewer the meters per salesman, the lower will be the over-all New Business costs per dollar of estimated annual revenue added.

5. The best results (E.A.R. per customer and lowest cost per dollar E.A.R.) are being obtained with less than 2,000 meters per domestic salesman and the same on heating.

6. Sales results can be budgeted in the relation to salesman power.

7. Salesman power is the one, positive, measurable force in an economical sales program.

Recommendations

1. Each company should determine what percentage of its total meters it wants to sell a given appliance or appliances or the amount of revenue it wants to add through the sale of appliances.

2. Each company should determine the average number of appliances per average year sold per salesman.

3. Each company should determine the estimated average annual revenue added per salesman through the sale of these appliances.

4. From the preceding factors, each company should determine the number of salesmen needed to do the job.

5. Each company should determine the additional cost of these salesmen.

6. Each company should determine the amount of money it can afford to spend to obtain new load through the sale of appliances and trim its sales to meet the pattern and then go to work.

Evaluation of Home Service

Presented by: C. W. Moody, Sales Manager, Cambridge Gas Light Company. Prepared Discussion by: G. G. Howie, Vice Pres. & Gen. Mgr., Cambridge Gas Light Co.

Conclusions

1. Gas usage was greater in those homes where home service calls had been made than in those not contacted.

2. The costs of increasing revenues through home service compares favorably with those reported for domestic appliance selling.

3. Home service can well be justified because of the intangible values produced but it is interesting to know that it can be used to increase revenue at reasonable costs.

4. Home service contacts were responsible for some appliance sales but the load thus added was not included in these studies.

Recommendations

1. Make studies of home service activities to ascertain their tangible value.

2. Study carefully the desirability of adding enough home service personnel to contact each customer once per year.

Revenue Life of Appliances

Presented by: R. D. Stuart, Jr., Gen. Mdse., Mgr., Blackstone Valley Gas & Elec. Co. Prepared Discussion by: P. J. Rempe, Vice Pres., Stone & Webster Service Corp.

Conclusions

It is not known for how long each appliance will produce revenue because the appliances surveyed have not yet completed their full revenue life span. However, data has been obtained which indicates the minimum revenue life of appliances. It is certain that data will eventually show the minimum revenue life of these appliances to be several years in excess of the minimum period.

Recommendations

1. A period of at least 10 years represents a conservatively safe figure to use in calculating the "average minimum revenue life" of automatic water heaters, house heaters and refrigerators.

2. A corresponding figure for ranges is probably greater and should be determined by each individual company for itself.

3. Each company should compile its own data on the revenue life of appliances.

4. Each company should study the effects of its sales policies and rates on the revenue life of appliances.

Minimum New Business Expense To Hold Revenues

Presented by: J. C. Willis, representing Brockton, Fitchburg & Springfield companies. Prepared Discussion by: H. B. Hall, Manager, Old Colony Gas Company.

(Note: At the Sales Managers Conference, this subject was presented by R. A. Maloney, Sales Manager, The Bridgeport Gas Light Company, who could not attend the December meeting.)

Conclusions

1. There exists a "base" or "minimum" New Business expense which a company will have irrespective of whether the company wishes to obtain additional revenues.

2. This minimum base or first New Business expense approximates $1 per customer per year for any company, including New England companies.

(Concluded on page 50)

Postwar Industrial Gas

By

J. E. Bullard

AFTER THE WAR, the electric power companies, the oil companies and the gas companies will find themselves with surplus capacities which can be utilized only by securing new business. This presages keener competition in the industrial heat field than ever before. When competition is keen and it is important to meet it successfully, wise sales managers watch the competing sales forces with care. Obviously, unless the industrial gas sales department is as large and the salesmen are just as competent compared with the corresponding departments and salesmen of competitors, the gas company is at a disadvantage. Hence, the importance of studying and watching those competing sales forces. Unless this is done and new men added as conditions indicate they should be and unless these men are at least as capable as those they will compete with, the gas company cannot obtain the maximum volume of industrial business. Obviously, this is just as true in business as it is in big league baseball. Yet, it is not always so easy to recognize the fact.

It is not too soon to look for the best available talent and to start training it as soon as it can be found and engaged. Some of the fields which look promising in the search for it are returning veterans of the war, those who have been working in war industries, graduates from technical schools, those who return from the war to continue their educations. Some companies in nearly all industries, already, are seeking the employes they will need for special work and competition for the best sales engineers is likely to be keen.

Those gas companies which, already, have made thorough surveys of industrial gas possibilities have taken a long step forward in securing the business they will need as war demands fall off and civilian demands can be satisfied. In the days when holding companies were coming into their glory, one company made it a general practice before taking over any new property to make as thorough and complete a survey of business getting possibilities as possible. As a result, as soon as it took control, it had the data which indicated how many salesmen would be needed and what kind of salesmen. Present day surveys are proving just as profitable to the gas companies making them as those surveys of that holding company did when it acquired new properties.

An analysis of such surveys makes possible estimates of the volume of gas which can be sold by industries, how much in textile mills, in machine shops, in candy factories, shoe factories and in each other industry which can use gas. Such an analysis is of greater importance in a city where the industries are diversified than in one where there are few different kinds of industries. Since, experience has demonstrated in all lines of business that the salesmen who specialize are more successful than those who do not, it follows that the man who specializes on textile mills or on other particular industry will sell more industrial gas than he could if he tried to cover the entire field. The reason for this is simple. To sell industrial gas it is important and, in many cases, necessary to understand the problems of the prospect. If the salesman has had actual experience in a cotton mill, a machine shop or whatever industry his prospect is engaged in, it usually helps him in closing sales.

Where the salesmen specialize, where there are enough prospects in a given industry so he can and the department in which he works is large enough so he can devote his entire time to one particular industry, trade or business, he can keep much better informed in regard to the needs and problems of his prospects than he could if he had to spread his efforts and his research over a broader field. One very important feature of surveys made now, therefore, is that from the data gathered it can be learned to how great a degree specialization will be practical in the case of the particular gas company making the survey. Unless this data is at hand more guessing has to be done when organizing or reorganizing the industrial sales force for postwar business and, if any of the guesses are wrong, changes may become desirable which would not be necessary had there been sufficient information available at the start to limit guesses to the minimum. As each change costs money as well as delays, it is an economy to spend money to obtain the data needed to make the proposed sales force just as efficient and effective as it can be made.

Such surveys, of course, should include new uses as well as present and past ones. There appears, for example, to be greater possibilities in heating mills and factories with gas than may be realized. This is true because gas permits of a more flexible heating system than any other fuel has yet made possible. If the output of a factory is variable, if some months or weeks the entire space is required while at other times only a portion of it, certain departments, are in operation, unit heating with gas may prove more satisfactory, cost less for fuel and for the original installation than any other heating system. What is true in regard to heating, of course, holds true regarding air conditioning. Therefore, when making surveys it is well to consider the layouts of the establishments of the prospects and variations in their production requirements. Enough data along this line may help immensely in securing space heating and air conditioning business which might not seem possible had the data not been gathered and studied.

All possible data regarding production records with industrial gas also need to be gathered. These are not always easy to get. Not all industrial gas users keep the records which are desired and if they do they may want to hold them for their own use and not give them out. Yet, all data along this line is of great value in selling industrial gas. It is so valuable as to make it worth while to have gas company men gather it in the plant of the consumer, if permission can be obtained, even though it may be necessary to install special meters to measure the gas consumption of various operations and processes. Such engineering tests, in fact, may be necessary to convince some prospects gas will serve them better than any other source of heat.

Every industrial gas user is forced by the competition he faces to place certain things first. Three of the most important are speed of production, quality of production and overall cost of production. In the future, it is likely, straight line production will be given more attention than ever before wherever it has not been adopted to the fullest possible de-

gree in the past. Straight line production requires that all processes requiring heat be in the production line. That is, the material comes into the plant at one point and continues in as nearly a straight line as possible from one operation to the next, one process to the next until it comes off the end of the line a finished product or a finished part. If there are heat processes along the line the equipment must be so designed it will fit in the line and must have the proper capacity to be co-ordinated with the rest of the line.

The greater the degree to which shop, mill and factory transportation can be reduced, the greater the saving in labor and floor space as well as any power which may be required for moving parts or material from one place to another. Any industrial gas salesman who is able to show an industrial gas consumer practical methods of straightening his production line has taken a long step toward selling that consumer more industrial gas. It was electric power which made straight line production possible at the start because electricity could be transmitted readily in any quantity desired to any machine. Both gas and electricity as well as oil make all heat processes adaptable to straight line production. They bear about the same relation to solid fuel heat as the electric motor does to line shaft transmission of power. For such reasons as these the industrial gas salesmen of the future will have to be better production engineers than has been necessary in the past.

There appears to be little doubt that the competition for the ultimate consumer's dollar will be greater after the war than it ever has been before. It has been estimated that a hundred years before the war, the average person needed only sixteen necessities and had only 52 wants. By 1940 the number of necessities had increased to 94 and wants to 484. Many new things will be placed on the market when peace comes and some of these will develop into necessities while others remain wants as far as the average person is concerned. If the greatest possible demand is to be created for all the new things, they will have to be produced at the lowest possible cost. If heat processes enter into their manufacture, it will not be the cost of fuel or other source of heat which counts but rather whether or not the cost of manufacture can be reduced. What applies to the new industries also applies to the old. Those industries prosper most which are able to give the greatest value for the consumer dollar. The degree to which industrial gas salesmen are able to help gas consumers do this through the use of gas, the greater will be the volume of the gas sold.

Accomplishing this may require changes in the application of gas heating where it is now in use. Unless the changes are made, the business may be lost. In the textile industry, for example, the use of infra red or surface combustion burners in place of those used in the past has speeded up production and made the mill a more enthusiastic booster for gas. The owner of a little factory using glass enamel insisted the heat he required could be supplied with atmospheric burners. He desired such burners because they would make unnecessary any pumps or compressors. He was assured, so he claims, by the gas company salesmen and by the salesmen of the appliance and furnace manufacturers it could not be done. However, he went ahead and designed and built melting furnaces which did do what he desired and did it with atmospheric burners. Naturally, he was loathe to give to anybody else the specifications of these melting pots. Had there been in the industrial department of the gas company research workers or engineers capable of designing what this man did design, those melting pots would have been available to any other industrial gas users to whom they would have proved an advantage.

One very effective way of securing more business from present consumers is to make a thorough study of each present use. If changes can be made which will make the application more effective, will reduce the quantity of gas required or will speed up production, they should be made. Making them increases the confidence the consumer has in the company and in the salesman and it opens the way for more business in the way of other uses of gas.

If all coal dealers had always made it a point to make certain each and everyone of their domestic customers secured the best possible results from the coal bought a good many of the gas heating installations now in use never would have been made. Because the householder never had been taught how to burn coal and the dealer had not pointed out to him defects in his heating system, the gas company was able to make a much better showing, than, otherwise, would have been possible.

In the same way, unless the industrial gas department is on the alert, constantly, to make certain that every user of industrial gas is getting the best possible results from the gas burned and that no other source of heat can serve as well, the electric or the oil salesman may get the business. Once any competitor has succeeded in driving an entering wedge, it becomes easier for him to increase his sales at the cost of the gas company.

Unless industrial gas is burned by a large corporation, it is not likely the smaller consumers will have engineering departments capable of designing and building gas burning equipment which will serve better than any which can be bought already made. Neither are they likely to be able to select from what manufacturers have to offer in various fields what will prove best for them. There just are not enough engineers in a small manufacturing company to do this. Hence, dependence has to be placed largely upon the salesmen of the utilities. In the long run it is the salesman who serves the customer best who gets the most business. It is the company which backs up such a salesman best which increases its volume most.

The manager of a malleable iron foundry said just after the last depression got well under way that it was not until it became more and more difficult to make sales that he really began to appreciate one of his salesmen. That man never had attracted too much attention although his sales volume was dependable. When business was hard to get, however, his sales stood out above those of all the others. When the manager of the foundry did a little investigating he discovered this was due entirely to the ability this man possessed to help his customers solve their problems through the use of malleable iron. The industrial gas salesman of the future will have to follow the example of this foundry salesman. He will have to know enough about all the problems of his prospects so he can help solve them effectively and solve them through the use of gas. If he solves them better than any competing salesman does he will build up business for the company.

FOR SUCCESS IN '45 . .

TRY

LAVINO "ACTIVATED" OXIDE

You can't lose with Lavino Activated Oxide because:

- ★ **It gives you maximum sulphur removal per pound of oxide**
- ★ **Its performance is thorough and uniform**
- ★ **Its activity for trace removal and its shock- resistance are high**
- ★ **In hundreds of gas plants it has consistently proved that it can be relied upon to give uniformly satisfactory and profitable results with loads of all sizes, from traces to the heaviest**

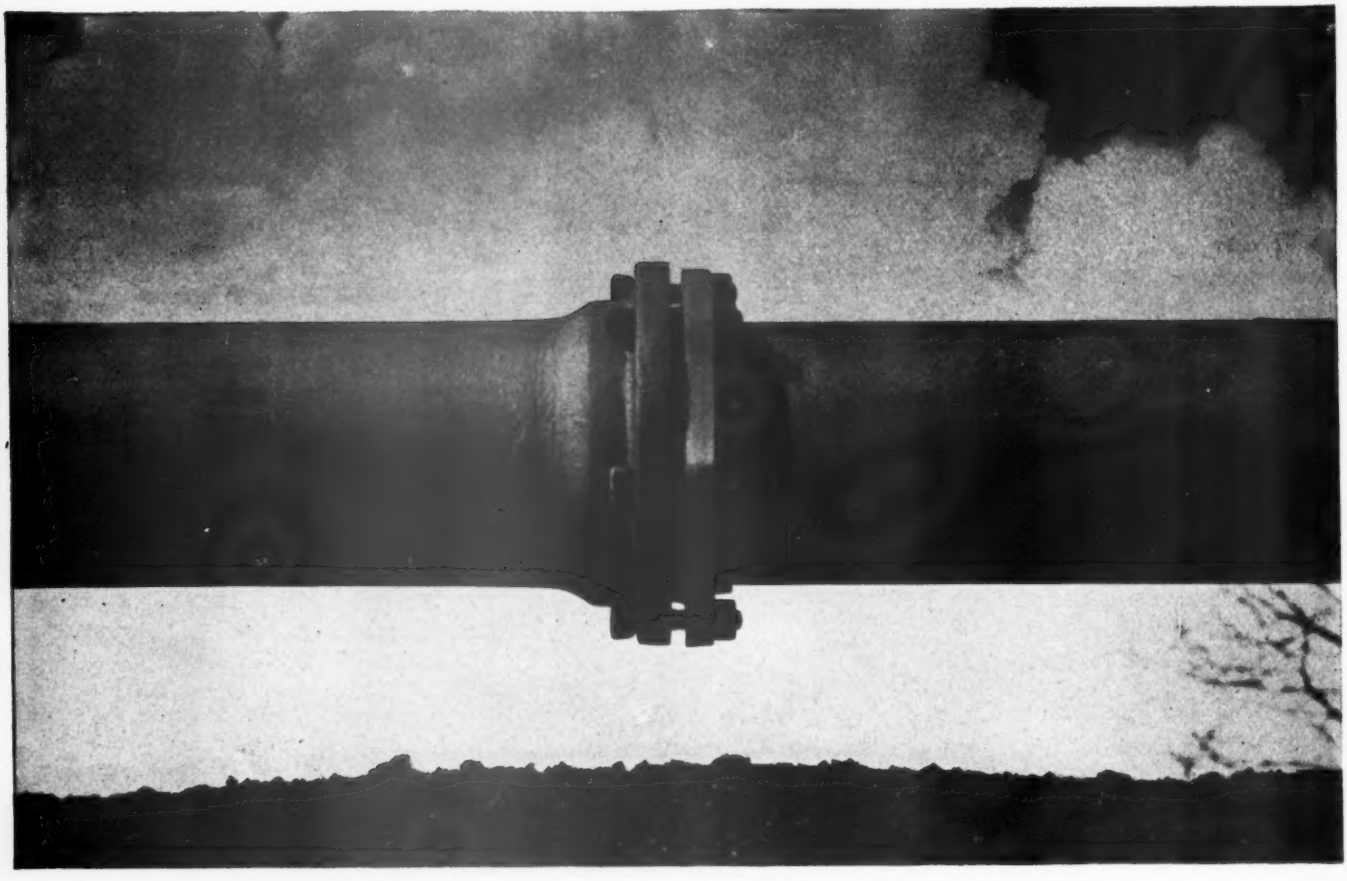
Supplied unmixed; or ready-mixed in "Sponge" form.

GREATER CAPACITY . . . GREATER ACTIVITY . . . LESS OXIDE REMOVES MORE H_2S!

E. J. LAVINO AND COMPANY

1528 Walnut St., Philadelphia 2, Pa.

BOTTLE-TIGHT and LONG-LIVED



HIGHER operating pressures brought about the only major change in cast iron pipe for gas service that has been required in more than a century — the bottle-tight mechanical joint. No pipe material could maintain such a record from the very beginning of the gas industry in America without being enduring, dependable and economical.

DELIVERIES of cast iron pipe with mechanical or bell-and-spigot joints can be made to enable you to maintain your gas distribution system at requisite efficiency to meet the existing demand. The Government encourages such maintenance, recognizing that gas is indispensable to many war industries as well as homes.

POSTWAR planning should be in the blueprint stage *now* so that the work can start when manpower is available and looking for jobs.

Cast Iron Pipe Research Association, Thomas F. Wolfe, Research Engineer, Peoples Gas Building, Chicago 3.

CAST IRON PIPE

Field Testing and Maintenance of Large Capacity Displacement Meters

By
T. G. Kimball
Iowa-Nebraska Light and Power Company

IN ANY gas company, no matter how large or how small, gas metering is one of the major problems and should receive study and attention both from the standpoint of maintenance and revenue.

The gas meter is considered the cash register of the company, as it registers the amount of gas the customer uses. From this amount the revenue is computed, and is shown at the end of the year as income of the company. This figure is used as a basis for taxes, profit, dividends, and other things for which the company is asked to furnish figures.

On the other side of the ledger we have the cost of the upkeep or maintenance which must be considered. If this is too high too much of the income will be used, and the dividends will be small.

The testing of large capacity displacement meters may be divided into two classes—High Pressure, or Critical Flow Proving, and Low Pressure, or Low Pressure Proving.

In testing with the critical flow prover there are several things which must be watched if we expect to receive a good proof on the meter:

1. See that the prover is installed properly and that there are no leaks in the connection.
2. See that the index readings are taken properly and set down on the test sheet in order that the amount of gas may be figured when the test is completed.
3. See that the pressure is constant before you start timing the meter, as a variation in the pressure will affect your test.
4. Check your stop watch at intervals to see that it is correct.
5. See that the line carrying the gas away from the prover is large enough so as not to cause a back pressure on the prover.
6. Wait until the temperature becomes constant on your prover thermometer before you start your timing.
7. The orifice plates must be clean and free from nicks.
8. The prover must be clean before installing as there may be an accumulation of dust and grease on the inside.

Among the many excellent papers presented at the nineteenth annual Southwestern Gas Measurement Short Course held at Norman, Okla. in June 1944 was this subject by T. G. Kimball.

The recommendations of the author will no doubt be of considerable interest to men in the gas industry who did not attend the meeting.

The complete bulletin of the proceedings with all papers presented has been sent to those who were in attendance.—Ed.

9. The mercury in the thermometer column must not be broken.
10. See that the outlet valve of the meter is tight.

If any one of these conditions is not watched it will tend to give you a small error in your test.

In testing with the low pressure prover these same things must be watched, either when using gas with the prover, or when using air and the electric driven blower. When using the blower care should be taken to see that speed is not varied too much by the variation in voltage. This may occur in small plants where equipment is turned on and the voltage is not brought up by automatic equipment on the line.

The barometer which is used in low pressure testing should be tested at least once a month if used in the shop, and once a week if used on the road. Time must be given to let it come to the same temperature as the standard before correction is made.

The manometer should be taken apart and cleaned out at intervals to free the working parts of lime, which corrodes the inside and makes the leveling device difficult to operate.

In testing with the low pressure prover it is sometimes convenient to remove the Emcorrector or the Pressure Volume Gauges and attach a wiggler to the dog on the index plate, and use this to check the revolutions made by the meter. In no case should the meter index plate be removed and the under gearing changed in order to make the test, because in doing so you are not able to check the undergear as a part of the test of the meter.

If the Base Pressure Index, Emcorrector, or Pressure Volume Gauges are removed while making the tests, they should be tested when put back into service for pressure, index readings, cycles, arm locations, chart time, and information of the back of the chart. This is considered as a part of the test of the meter.

On distribution systems, either high or low, we have meters set in school houses, stores, bakeries, creameries, and other industries where testing either by air or by gas is prohibited, because of the odor and gas which is expelled into the room, and which travels all over the building causing a great deal of dissatisfaction to the customer.

In order to get away from this, the valve plate units are tested in the shop, the units are changed and the used unit is brought into the shop, where they are tested and repaired for the next job.

In order to make a satisfactory change a bypass is installed on the meters and this is used while making the change. This is done in order to keep the gas in the building system while the changes are being made, as there may be a large number of small appliances in doctors', dentists', and other types of offices which must be kept in operation while the changes are being made.

The gas in the meter is bled off by means of a hose to the regulator vent which carries it to the outside.

After the change is completed gas is turned into the outlet of the meter to force the air out of the meters through the hose and vent connections using about three revolutions of the ten foot hand in order to make sure that there is no air left in the

meter to cause trouble when the meter is put back on the line.

The handling of valve plate units in this manner necessitates caution in order that the diaphragms and pans are not injured. This may be done by making a frame for the valve plate unit to set on and the unit fastened to the frame to keep it from sliding around and injuring the gasket. Small casters may be put on the bottom of the frame to help in moving the units about the shop or the place where they are to be changed.

Some of the ills which are found in the displacement meters are:

1. Frozen valve gears. When these valve gears freeze look for two other sources of trouble:
   a. Broken diaphragm, or
   b. The tangent arm has slipped on the tangent gear shaft.
2. Loose valve port screws, which allow a leak in that part of the diaphragm chamber, causing the meter to run very slow on the check test.
3. Pieces of valve plate gasket sticking to the center partition of the meter case, causing a leak between the two sides.
4. Flag arm brackets striking the side of the case, not allowing the valve plate unit to set down in the case and match up with the holes in the case.
5. Flag arms that come loose on the flag rod causing the meter to run slow.
6. Gum on the valves and covers causing the meter to be slow.
7. Oil on the valves and connections causing the meter to be fast.
8. Small leak between the diaphragms and pan at the point where the band comes together.
9. Loose links, both valves and tangents.
10. Worn bearings and bushings.
11. Worn crank and bushings.
12. Water or oil in the bottom of the diaphragms and meter.
13. Line rust and dirt, which cuts the valves and bearings.
14. Line rust and dirt in the bottom of the diaphragm and case.
15. Warped valve.
16. Valve cover striking valve guide at the end of the stroke causing it to lift up.
17. Too tight a fit between the valve links and the valve wire, causing the valve to raise off its seat.
18. Gear on under gearing loose on the shaft.
19. Loose arm on the undergearing which may raise up and not strike the tangent post.
20. Block tangent loose on the tangent arm allowing it to tip up as the tangent nuts are tightened make the meter either fast or slow.
21. Valves and covers ground by foreign particles.
22. When putting valve units in meters the gasket strip between the pans should be checked to see if it is on the center division.

There may be others in localities where a different kind of gas is used, and they will have to be handled in a different manner.

Valve grinding is a task that takes time and should not be hurried, as a poor set of valves can cause trouble for the tester. In making valve grinding blocks, plate glass can be used as the main plate, and grinding paper of a different grit can be glued on the glass, care being taken to see that there are no bubbles in the paper and that the edges are solid, if not the loose edge will cause a rounding edge on the valve cover, and leave a small crack between the valve and seat when the valve passes the edge of the seat causing a leak.

The old railroad book press has been found to be a very handy thing in putting the paper on the glass using a flat piece of wood next to the paper to help take up the moisture from the glue.

(Continued on page 49)

YOUR TRENCHER NEEDS
• Ruggedness
• Mobility
• Speed
• Power
• Dependability
• Low Operating and Maintenance Costs
• Maneuverability

You Get Them 100% In
"CLEVELANDS"

Here's Why
• Balanced Wheel Type Design
• Full Crawler Mounted
• Multi-Speed Transmission
• Quick Shift Conveyor
• Anti-Friction Bearings
• Superior Quality Construction
• Simplified Steering
• Welded Frame and Boom

THE CLEVELAND TRENCHER COMPANY
20100 ST. CLAIR AVE. "Pioneer of the Small Trencher" CLEVELAND 17, OHIO
"CLEVELANDS" Save More... Because they Do More

Battles Are Won By Well Trained Troops

Convert Your Postwar Planning into Action with an Effective Personnel Training Program

By
R. E. Williams,
New Business Mgr.,
Binghamton Gas Works, Binghamton, N. Y.
Chairman—Committee on Selection & Training of Sales Personnel.
American Gas Association

MODERN specialized personnel training will be just as important to the gas industry in its battle for postwar markets as military and naval training has been to our armed forces in paving the way to decisive victories on world battle fronts. An uninformed employee, a mediocre, ineffective salesman or an unenthusiastic, untrained dealer will prove a definite liability to us at a time when we shall need every bit of assistance that we can muster.

The answer is clear — we must train our general employees, our sales personnel and our dealer sales people *now*, before our battles begin.

Your Committee on Selection and Training of Sales Personnel, of the Residential Section, American Gas Association, has undertaken a two-fold assignment. Its first task, that of providing an adequate program for the selection of sales personnel, has been lightened very considerably through the cooperation of Servel, Inc., who have made Dr. Robert N. McMurry's comprehensive, workable program for the Selection of Gas Appliance Salesmen available to the gas industry. If you have not enrolled your sales supervisors in the training clinics to be provided by Servel, Inc. to equip them to make effective use of this excellent program, please do so at once. Be certain that your sales manager and sales supervisors can put the programs into operation with the first prospective salesman that you interview. Thus you may set the stage for effective training by insuring careful selection of sales personnel. Remember that even the best training program obtainable can not produce good salesmen unless there is good material to start with. Our scientific prowess not withstanding, "we cannot make a silk purse out of a sow's ear."

Once we have selected the best potential sales personnel available, we must be prepared to train them so that we may enter the postwar selling arena with a staff of alert, informed, aggressive gas appliance salesmen. But we dare not stop there. In addition to carefully selected and well-trained gas company sales personnel, we must see to it that our gas appliance dealers are provided with assistance in the training of their salesmen. And, finally, we must be certain that all gas company employees, particularly customer contact employees, are well informed as to gas company practices and policies and that they know the how and why of building gas load.

After a careful survey and evaluation of all of the factors involved in the building of an aggressive organization to promote the sale of residential gas appliances, and to build gas load, your committee has gone to work to produce an industry-wide program for indoctrination and sales training, comprised of the following features:

I. Basic training in **Fundamentals of the Gas Industry**, to be required for all residential appliance salesmen and to be strongly recommended for the training of other gas company personnel, particularly customer contact employees. This course to be organized in three units along the following lines:

Unit #1—GAS—THE FUEL
Historical sketch of the industry.
Types and composition of fuel gases.
Production, transmission and distribution of gas.
Utilization of gas.

Unit #2—GAS—THE SERVICE
The gas company as a public servant.
Maintaining good relations with the public.
Providing friendly service in the home.
Building good will through customer contacts.
Representing the company.

Unit #3—BUILDING THE GAS LOAD
Load-building a part of every job.
Keeping a lookout for leads.
Developing "sales mindedness."
Helping to promote appliance usage.
Making friends for the Company.

II. Specialized training in **Residential Gas Salesmanship**, to be required for all residential gas salesmen and to be recommended for the training of dealer sales personnel. This course to be built in six units to include the following subjects:

Unit #1—WIN CONFIDENCE QUICKLY
Correct selling methods do increase sales.
Start with the right approach.
Find out each customer's specific needs.
How to get people to listen to you.
How to get people to believe you.

Unit #2—SELL THE SERVICE
What do people really want?
Sell convenience, cleanliness, economy and beauty of modern gas appliances.
Sell the idea of coordinated gas kitchens.
Sell the benefits of gas for the 5 Big Jobs.

Unit #3—SHOW AND EXPLAIN
Know gas appliances thoroughly.
"Sales slant" your demonstrations.
Show how the appliance performs.
Explain why it will benefit the customer.
Sign up the easy ones.

Unit #4—COMPLETE THE SALE
The average customer hesitates before buying.
Your best move is to keep on selling.
Personalize the benefits to the customer.
Make price lead to a close.
Close the normal sales.

Unit 5—CLOSE THE HARD ONES
Expect resistance and prepare for it.
Handle difficult customers smoothly.
Take awkward situations in stride.
Use objections to help the sales.
Choose the correct closing method.

Unit #6—PLAN FOR MORE SALES
Sales manage your own time—it pays.
Use the telephone wisely to build sales.
Systematize your prospect hunting.
Pick up live leads from five sources.
You can—if you will.

III. **Specific Product Training** will not be provided by the Committee; but it is expected that gas appliance manufacturers will develop training material for use by utility and dealer salesmen on specific features and selling points of their products.

No course of training achieves maximum results unless it is easy to conduct and interesting as well as instructive to the participants and adaptable to local policies and conditions. After a careful survey of the field, your Committee has chosen a nationally recognized producer of business training courses, Tradeways, Inc., to prepare and produce the training courses. This company has produced several previous courses of the American Gas Association and has had a broad experience in similar work in more than fifty other industries. Both courses will be entirely new with respect to media, methods and contents and will be based upon nation-wide survey data and field experience.

In an effort to insure interesting and profitable meetings with opportunity for introduction of local material as required, each unit of both courses will be built in accordance with the following pattern:

Step I:—To arouse interest and stimulate thinking among the participants a problem or sales case will be handed out before each meeting together with a list of questions. The sales case will narrate incidents in which ideas brought out in the meeting should have been used. The participants will be requested to answer the questions before the meeting and discuss the answers during the meeting. The purpose is not to examine the participant, but rather to stimulate his interest in the meeting.

Step II:—At the meeting to be conducted for each unit, two sound-slide films will be presented, one of which will analyze the sales case, the other will dramatize the main points of the subject covered by the training unit. A Leader's Guide will furnish the group leader with suggestions and material for one or more meetings on each unit and will provide outlines for the introduction of local material as to company policies and plans.

Step III:— A brief, clearly written, illustrated text will be handed to each participant at the conclusion of the meeting for each unit of the training program. The text will be punched for insertion in a standard ring binder to be retained by the participant for later study and reference. Provision for the inclusion of notes on local policies will be included, or separate sheets may be provided locally to meet company requirements.

Step IV:—At the conclusion of each course, individual members of the group who successfully complete a written quiz, will be awarded a certificate by the American Gas Association.

Outline of the Program

Every effort will be made to provide the participants with an overall picture of the gas industry and its aims in the indoctrination course, "Fundamentals of the Gas Industry." Obviously the treatment must be of a general nature to include the gas industry as a whole. The program, therefore, should be adaptable to use by natural, mixed and manufactured gas properties; local policies and practices may be introduced in a program of this nature even more effectively than by means of an individual local program, in most cases, because of the interest sustaining nature of the program.

The treatment of the course, "Residential Gas Salesmanship," will be realistic and practical. It will deal directly with the important phases in the sale of residential gas appliances from the prospect list through the sale to the call back after installation. The New Freedom Gas Kitchen, C-P Gas Ranges and Gas Water Heaters, Summer-Winter Air Conditioning and all other of the new gas appliance developments will be adequately treated in the program. Since the course, "Fundamentals of the Gas Industry" covers the elements of training, particularly applicable to gas company employees, no reference to load building will be included in the course. For this reason, dealer sales organizations will find the meetings and texts "right down their alley."

The production of the courses, "Fundamentals of the Gas Industry" and "Residential Gas Salesmanship" will be undertaken by the Committee immediately upon assurance of industry support. A considerable investment is involved and before authorization can be given to begin work on the courses, the Committee must determine the probable number of enrollments that will be purchased. A brochure has been prepared which outlines the courses in considerable detail, indicates the plan for the sale of the training program to gas companies, and includes a form for preliminary and tentative commitments as to enrollments desired. If you have not received this brochure, write to the Residential Section, American Gas Association, 420 Lexington Avenue, New York, New York for a copy. In any event, be sure to fill out and return the tentative enrollment form as soon as possible so that the committee may proceed with the production of the program.

The program will not be produced until and unless a sufficient demand for it is in evidence. The Committee awaits the verdict of the gas industry with confidence that a prompt "go ahead" will be given and that the fatal slogan "too Little, Too Late" will remain buried in the wreckage at Pearl Harbor.

Presented before the series of Sales Clinics sponsored by the Residential Gas Section of the American Gas Association.

Pacific Coast Committee Report on Improvement of Gas Utilization Equipment

The complete report of this P.C.G.A. Committee presented in part in the December issue of the JOURNAL has now been issued in final form in a bulletin of 32 pages.

It covers recommendations for post war gas appliances including Domestic Gas Ranges, Gas Refrigerators, Automatic Storage Water Heaters, House Heating Appliances, Commercial Ranges, Roasting Ovens and Deck Ovens, Commercial Broilers, Deep Fat Fryers and Promotion of Commercial Cooking.

The Committee on New Types of Appliances has been collaborating with designers and manufacturers with the hope that its report will be reflected in the form of actual appliances ready for the market.

GLOVER-WEST

CARBONIZING SYSTEMS

• *boost* production

• *cut* fuel costs

440 CARBONIZING PLANTS, in 20 countries, testify to the outstanding advantages of GLOVER-WEST Systems.

Today, with the fate of civilization depending on the speed and efficiency of our war-output, these advantages cannot be overstressed:

GLOVER-WEST CARBONIZING SYSTEMS

- ***LOWER*** Fuel Consumption and Maintenance
- ***FACILITATE*** Operation
- ***PRODUCE*** dryer, cooler Coke
- ***REQUIRE*** less Ground Area
- ***INSURE*** greater Flexibility

WEST GAS IMPROVEMENT CO.
424 Madison Ave., New York, N. Y.

All sizes up to 3,400 cu. ft. capacity

Meters
Diaphragms
Repairs
Provers
Pumps
Calorimeters
Wet Meters
Gauges
Apparatus

METER REPAIR PARTS

FOR

ALL MAKES — ALL SIZES OF METERS

LARGEST GAS COMPANIES NOW USING OUR PARTS

SEND FOR OUR CIRCULAR ON METER REPAIR PARTS

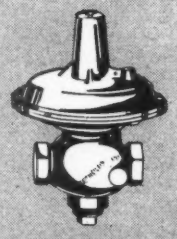
SAMPLES AND PRICES GLADLY SENT

— o —

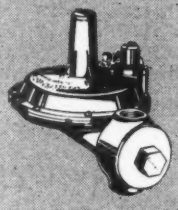
LAMBERT METER CO.
PLAINFIELD, NEW JERSEY

52 YEARS OF EXPERIENCE

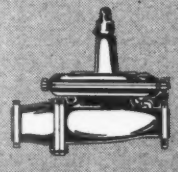
BACKS EVERY *Reynolds* UNIT



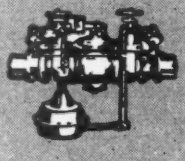
LOW PRESSURE



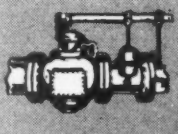
SERVICE



INDUSTRIAL



DISTRICT STATION



HIGH PRESSURE

★ Fifty-two years of successful experience in the Gas Control field has given Reynolds an enviable position of Leadership in that field. Regardless of place or type of regulation needed—in the line—at the station—for industrial plants—or in the home, there is a superior proven product by Reynolds.

The introduction of new regulators to meet changing requriements is proof of Reynolds' Leadership and is part of Reynolds' program of constantly improving its products. For, Reynolds is not contented to rest upon any past achievements. Reynolds is proud of its position and is determined to continue its Leadership—to the end that Reynolds will always be the one best source of supply for Gas Control Equipment.

★

REPRESENTATIVES:

Eastern Appliance Company
Boston, Massachusetts

Wm. A. Ehlers
No. 268 Park Street
Upper Montclair, N.J.

BRANCH OFFICES:

423 Dwight Building
Kansas City, Missouri

2nd Unit
Santa Fe Building
Dallas, Texas

Gas Control Since 1892

REYNOLDS GAS REGULATOR CO.
ANDERSON, INDIANA, U. S. A.

RECENT COURT DECISIONS
Affecting Gas Utilities

Review 1944 Higher Court Gas Law Suits

By
Leo T. Parker
Attorney at Law
Cincinnati, Ohio

DURING the year 1944 the higher courts have rendered many unusually important decisions which affect a majority of our readers. Many of these modern decisions reverse older law. Therefore, in this article we shall review the most outstanding 1944 higher court decisions which will assist gas corporation officials to avoid law suits and, also, to assist them to win favorable verdicts in event of unavoidable suits.

Impossible to Perform

If a gas company makes a contract to supply gas which is in itself possible, the company will be liable for a breach of the contract, notwithstanding it is beyond its power to perform it. But where, from the nature of the contract itself it is apparent that the parties contracted on the basis of the continued existence or supply of gas, a condition is implied that if performance becomes impossible because that supply does not exist, the gas company is not liable for breach of the contract.

For example, in Housing Authority of City of Bristol v. East Tennessee Light & Power Company, 31 S. E. (2d) 273, reported November, 1944, it was shown that a gas company contracted to supply natural gas for heating the tenanted buildings of a municipal housing project. Later the natural gas supply became exhausted and the gas company did not supply artificial gas to meet the demands of the tenants of the housing project.

The housing authority sued the gas company to recover damages and alleged breach of the contract. In holding the gas company not liable, the higher court said:

"The real reason Utility (gas company) could not deliver the natural gas was that the quantity required had ceased to exist. . . . Utility had dismantled its artificial gas plant. Besides, artificial gas is a different kind of gas from natural gas. It has different characteristics, and different means have to be provided for its distribution. . . . The contract related to natural gas. . . . Each party to the contract knew that the supply of gas had to come from that specific locality. They contemplated and assumed its continued existence and contracted with reference thereto as the means of performance."

Lease Relieves Gas Company

It is well established law that one who maintains an office or other building is bound to use at least ordinary care to keep the premises safe. However, according to a modern higher court decision a gas company is relieved from liability for injuries to its customers, if it had a lease contract which contains a clause that the landlord shall keep the building in a safe condition, or perform certain services.

For example, in Ventromile v. Malden and Melrose Gas Company, 57 N. E. (2d) 209, reported December, 1944, it was shown that a woman when going into a gas company's office to pay a gas bill slipped and fell sustaining serious injuries. She sued the gas company for damages and proved that the floor was waxed and slippery.

During the trial the gas company proved that it leased the building from its owner and that the lease contract provided that the building owner would furnish the "light, heat and janitor service."

In view of this clause in the lease the higher court refused to hold the gas company liable, saying:

"It could have been inferred that the defendant (landlord), and not the defendant Malden and Melrose Gas Company, was in charge of waxing the floor."

Also, see Kansas City Gas Company, 181 S. W. (2d) 165, reported August, 1944, where a gas consumer, who received serious burns as a result of an explosion in her stove, filed suit.

The stove had been sold to her by the gas company and it was "adjusted" by its employes. However, the higher court refused to hold the gas company liable because she failed to prove that the explosion resulted from negligence of the gas company employes.

On the other hand, see Ohio Gas Company, 51 N. E. (2d) 909, reported January, 1944, where a pedestrian sued a gas company to recover damages and proved that the gas company employes were negligent in allowing a curb box to extend above the level of the sidewalk and in neglecting to repair the broken lid of the box.

In view of this testimony the higher court held the gas company liable.

Brief Review

We shall direct the attention of readers to a relatively large number of higher court decisions, involving municipalities and gas corporations in relatively small space. While the hereinafter litigations are not explained in detail, yet the modern citations may prove advantageous in winning future suits to point.

Validity of Contract

In Saulsbury Oil Company v. Phillips Petroleum Company, 142 Fed. Rep. (2d) 27, reported July, 1944, the higher court held that where a casinghead gas contract provided that the seller grants, bargains, sells, and agrees to deliver casinghead gas to the buyer, and the contract obligated the buyer to return to the seller a portion of residue gas remaining

after processing of casinghead gas, the contracts were valid contracts of sale and the title to the casinghead gas passed to buyer *on delivery* thereof into its gathering line.

This higher court further explained that, in contracts of this nature, if the identical thing delivered to the buyer is to be returned to the seller there is ordinarily no transfer of title, but if the buyer to whom delivery is made is to return another thing of the same kind or a different thing, to the seller, the transaction will ordinarily constitute a "sale" and effect a change of title.

Tax on Gas Held Invalid

It is well established law that a state cannot tax interstate transactions or merchandise shipped interstate into the state.

In United Gas Pipe Line Company v. Lee, 17 So. (2d) 553, reported July, 1944, it was shown that a gas company sued Florida authorities to prevent collection of taxes on gas sold to public utilities within the state. The testimony proved that the gas was delivered into the state through pipe lines in an uninterrupted stream under constant pressure from other states. The higher court held the Florida authorities without power to collect tax on the gas, and said:

"It is our conclusion that the facts alleged bring the appellant (gas company) within the rule enunciated by the Supreme Court of the United States in the case of State Tax Commission v. Interstate Natural Gas Company, Inc., 284 U. S. 41, 52 S. Ct. 62, 76 L. Ed. 156, and similar cases. See Illinois Natural Gas Company v. Central Illinois Public Service Company, 314 U. S. 498, 62 S. Ct. 384, 86 L. Ed. 371."

Ownership of Streets

In Lambach v. Town of Mason, 53 N. E. (2d) 601, reported April, 1944, the legal ownership of city streets was before the court for decision. This court held that if the plat laying out streets was not restricted by state laws but was a common-law plat, then the municipality acquired only an easement to use the streets. The legal ownership was in adjoining lot owners whereby they had a right to maintain pipes under the street. Moreover, this court said that if the municipality did not own the fee in its streets, by statutory dedication, it could not convey or lease any portion of its streets.

Also, see Gilbert v. Northwestern Natural Gas, 134 Pac. (2d) 444, reported March, 1943. In this case a gas company violated a city ordinance which provides that all pipe lines shall be laid not less than fifteen inches below the surface of streets, alleys and avenues. When a construction company was grading a street its grader struck a buried gas pipe which permitted gas to pass under a building.

An explosion occurred and the court held the gas company liable because it had violated the above mentioned city ordinance thus resulting in the grader breaking the gas pipe.

Payment Controversy

In Quintana Petroleum Company v. Commissioner of Internal Revenue, 143 Fed. Rep. (2d) 588, reported August, 1944, the higher court held that bonus payments made by a taxpayer, in acquiring gas leases in previous years, of which a part was allocated to the gross income from the leases during a taxable year, represented money payments to lessors and that these payments constituted advance royalty subject to percentage depletions, and must be deducted from the gross income received by the taxpayer in computing his depletion allowance.

Royalty Holder

In Simpson v. United Gas Pipe Line Company, 17 So. (2d) 200, reported May, 1944, it was shown that a gas purchase contract obligated the buyer to pay specified prices for gas during the duration of the contract. At this same time the owners of various interests in the gas lease executed an "order" authorizing the buyer to receive gas and pay the owners for their respective interests in accordance with the gas purchase contract.

The higher court held that this constituted a "contract" which established the gas prices to be paid by the buyer to the holder of a royalty interest. This court held further that the royalty holder could not recover excess of the market price over the amount actually received from the buyer.

Jurisdiction of Federal Courts

In Kerley v. Standard, 31 S. E. (2d) 438, the higher court held that the federal courts have final authority in matters under federal statute and of diversity of citizenship.

In this case a person living in one state sued a company in another state to recover damages for death of her husband caused by gas explosion. In holding that the suit should be tried before a federal court and not a state court the court said:

"The facts stated in the petition are sufficient to justify removal."

Physician's Statement Not Final

In Hardin v. State Compensation Commissioner, 31 S. E. (2d) 436, reported October, 1944, it was shown that an employe of a gas company suffered an injury to his middle finger, although the ring and small fingers were probably injured to a lesser degree. As a result the middle finger was amputated through the middle of the second metacarpal bone. The statement in the physician's report was that the employe was partially and permanently disabled in the amount of 33⅓ per cent.

The company appealed to the higher court which reversed the verdict and explained that a physician's statement or report is only intended as *one* means of determining the true facts.

Stock Distribution Is Income

Generally speaking, redistribution of a corporation's stock is not accountable as income for tax purposes. However, a recent higher court modified this usual rule.

For example, in Old Colony Trust Company v. Aymar, 56 N. E. (2d) 889, reported November, 1944, it was shown that a gas company's stock was owned by an oil company. This stock was distributed to the oil company's shareholders pursuant to an order of the Securities and Exchange Commission that the oil company divest itself of such stock. The distribution did not impair the capital of the oil company.

Some of the stock was distributed to a trustee under a will by the deceased who had owned the stock.

With respect to payment of income taxes by the trustee for the estate, the higher court held that distribution of the stock was equivalent to a dividend and was required to be treated as such income.

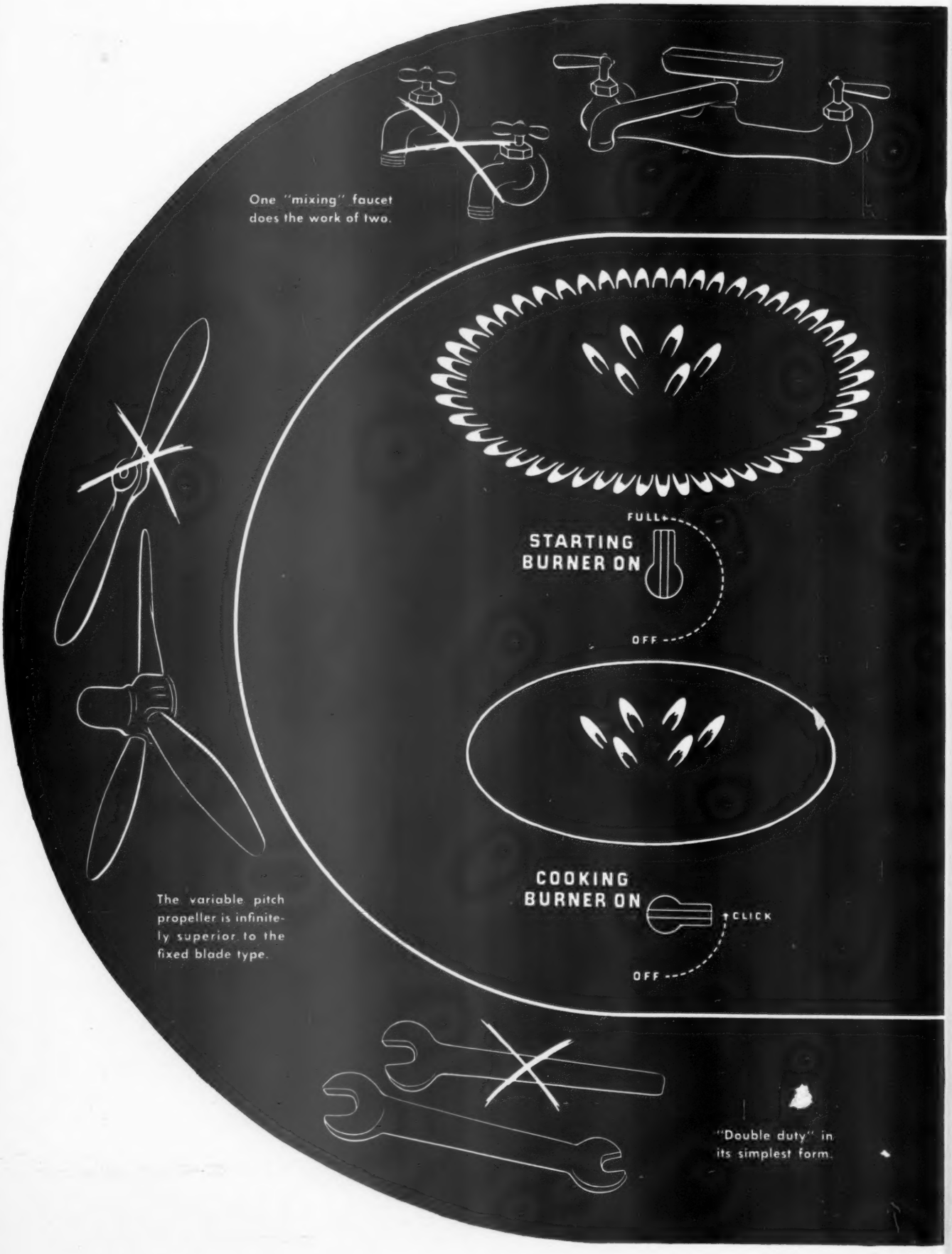
Deed Speaks for Itself

Considerable discussion has arisen from time to time over the legal question: When may a party to a written contract introduce testimony of verbal agreements or statements to prove his legal right to win the suit?

Modern courts consistently hold that in the absence of an ambiguity that does not appear from an inspection of the paper alone, oral testi-

(Concluded on page 50)

What will the gas range of


One "mixing" faucet does the work of two.
FULL
STARTING BURNER ON
OFF
COOKING BURNER ON
CLICK
OFF
The variable pitch propeller is infinitely superior to the fixed blade type.
"Double duty" in its simplest form.

the future be like . . . and WHY?

DISCUSSION NO. 11

Top burners will do DOUBLE DUTY

. . . and they're available now!

The variable pitch propeller performs double duty—can be adjusted to function at equally high efficiency at take-off or in the stratosphere. It is one of the devices that have helped the development and assured the future of aviation.

So it is with the gas industry—to assure the continued dominance and acceptance of gas as the ideal cooking fuel, there must be continuous research and development.

Many new developments in the gas appliance field may be expected in the future. One of them, so far as top burners are concerned, is already here—*the Harper Burner System.*

Like the variable pitch propeller, it performs double duty for the housewife. Each burner on the range is actually 2 burners in 1 . . . a burner within a burner . . . both operated and controlled by a single handle.

The large STARTING BURNER is for fast frying and quickly bringing foods to a boil. The inner COOKING BURNER is used for maintaining the cooking with a tiny flame . . . a tiny flame that spreads its heat evenly over the bottom of the vessel. This separate COOKING BURNER can be used entirely independently of the STARTING BURNER. No other top burner possesses this vital advantage. It insures easy, accurate control; just the right amount of heat for every type of top burner cooking. It permits a saving of up to 39 per cent in fuel—and "waterless cooking" that retains more of the important vitamins and minerals in vegetables. These, and other important advantages of the Harper Burner System can be demonstrated easily and dramatically to the housewife.

The Harper Burner System, we firmly believe, will become the standard for top burners in the de luxe Gas Range of the Future. It will be of material assistance in the current AGA program to keep the consumer convinced that "Gas assures cool, clean, odorless cooking."

HARPER-WYMAN COMPANY

8562 VINCENNES AVENUE
CHICAGO 20, ILLINOIS

ARMY E NAVY

HARPER · BURNER SYSTEM ·

2-burners-in-1

Sales and Advertising Policies for the Gas Industry

By O. R. Doerr

Chairman Sub-Committee
on Sales Policies
Pacific Coast Gas Assn.

O. R. Doerr

1. Sales and Merchandising Policy

IT is recognized that any attempt to write a Sales and Merchandising policy that could be adopted universally by the industry would be doomed to failure. There are too many variables as to size and type of company as well as size and economic factors of the area served. Your Committee's report is therefore confined to the broad, basic principles which all companies should consider in the development of any sales policy that is designed to meet the vigorous challenge of the postwar period.

If we are to hold our gains and advance the public acceptance and utilization of our product we must progressively promote all gas appliances and equipment. This is particularly important in view of an anticipated stepping up of competitive effort from other types of fuel.

Methods of Promotion

The direction of this aggressive promotion will depend largely upon many conditions in the area of service. It may require direct selling by the utility or a strenuous promotion through dealer outlets or a combination of both. Member companies will have to analyze their particular situation to determine the most effective method. To attain the maximum results, these promotions should be carried on through adequate and satisfactory outlets.

Irrespective of the method employed to give the proper emphasis to the promotion of appliance and equipment and to halt the inroads of competition, each member Company should decide as early as practicable which plan is best suited to meet its conditions. Each utility should advise manufacturers, wholesalers and dealers of its determined course of action in order that these trade channels may complete their plans for the transition from war to peace.

In those instances where the utility decides upon a direct selling program, it is recommended that a policy be adopted which will permit dealers to participate on a profitable basis. The following items should be considered:

1. Profit margins
2. Financing
   (a) Length of terms
   (b) Down payments
   (c) Interest rates
3. Dealer participation in campaign planning
4. Trade-in allowances
5. Guarantees

Home Economics

Serious consideration should be given by all utility companies to the use of home economists in sufficient numbers to provide reasonable coverage. A home economics program will tend to protect existing gas loads and will furnish an additional strong promotional medium to aid in the sale and proper utilization of gas appliances. It will also provide a means to help in the training of retail sales people.

Adequate Retail Outlets

To strengthen our channels of distribution, immediate attention should be given to the re-establishment of suitable and adequate appliance outlets to insure:

1. Full public access to utilization devices
2. Convenient locations of retail outlets, adequately stocked and sufficiently financed, to cope with the competition from other fuels and other industries.

Research and Dealer Aids

The Utility Companies should undertake some investigation and research to determine where and how they can aid and assist retail outlets in the better performance of their function in the distribution of gas appliances.

The Utility Companies, as leaders in the industry, should undertake studies and analyses of:

1. Population trends and shifts
2. Customer growth
3. Housing requirements
4. Appliance saturations and past sales records

The Sub-Committee on Sales Policies of Pacific Coast Gas Association has reported its recommendations in a complete and specific coverage of sales promotion.

Many of the activities advocated may be applied effectively throughout the gas industry in both natural and manufactured gas territories.

Each of the five topics presented may be used as a pattern, subject to modification for individual local campaigns and adapted to meet the needs of local postwar operations.

It will bear the careful study of all gas company executives and sales managers.—Ed.

5. Potential and early war markets
6. Availability of appliances and devices

Such information should be developed by trading areas and made available to trade allies for their guidance in the development of individual postwar plans. Prospect lists should be compiled and made available for dealer use.

The importance of selling in the postwar period cannot be overemphasized. To develop the maximum effectiveness of dealer organizations, training and refresher courses for retail sales people should be provided. Any utility sales and merchandising policy that is adopted should make provision for the conduct of such courses under the leadership of the utility.

Selection of Lines

To safeguard the maintenance of and to develop an expansion of public acceptance through satisfied users, it is urged that Member Companies recommend and/or sell only A.G.A. approved appliances.

In considering the long range aspects of sales policy in the postwar period, consideration should be given to the advisability of standardizing lines and models. Such standardization in lieu of "special" models and demands for a variety of gadgets would permit more economical manufacture with a resultant lower cost to the customer. It would also allow manufacturers to more nearly gear their output to mass production methods. Of course, it is recognized that we cannot hope to compete with other types of appliances if we attempt to sell "stripped" models. The industry must keep pace with new developments and must be in a position to offer the customer all of the advantages, conveniences and new developments which other appliances have. It is felt, however, that some standardization of lines can be obtained without in any way sacrificing the advantages of modern devices.

It seems desirable that we, as an industry, endeavor to secure as wide an appliance distribution as possible through the establishment of an adequate number of retail outlets that can be profitably operated. To insure the attainment of these objectives, utilities should not demand or accept the "exclusive" on a make or line of merchandise. If for some warranted reason they consider taking an exclusive, consideration should be given to:

(a) The effect on economics of local distribution
(b) Utilities relations with dealers in its area of service
(c) The basis of competition between the "exclusive" line and other lines handled by dealers

Installation

The adoption of a policy on the installation of appliances to insure complete customer satisfaction is recommended. In most instances, this will require a provision for the adequate venting of appliances.

The practice of contracting installation work to dealers is desirable, particularly as it pertains to domestic appliances. Where no competent dealers are available to do this installation work it may be necessary for the utility to assume this responsibility. It is recommended that every effort be made to foster and establish an adequate number of organizations to handle installation work.

Compensation

In the past, gas industry firms (utilities and others) have been criticized for their methods of compensating salesmen. Too often these compensation plans have not been of the type that would attract high caliber men.

While there are many different types of compensation, such as straight salary, straight commission or a combination of both, the Committee feels that the selection of the exact method is a matter for individual Company decision. It does seem, however, that *some* type of incentive compensation should be adopted as an aid to load building. Any sound compensation plan embraces three broad objectives. They are:

1. Building and maintaining good will for the company
2. Incentive for greater production
3. Influence on the salesmen's morale and enthusiasm

These objectives are fundamental. However, there are many other considerations which should be weighed. Will the compensation plan selected:

1. Attract high caliber men who want to make a career of selling?
2. Decrease the labor turnover that has been so expensive in many organizations?
3. Give management adequate control over the salesmen's activities?
4. Encourage the type of customer service the management wants?
5. Reward like ability and effort with reasonable uniformity?
6. Provide the incentive to sell customer satisfaction as well as the product or the service?

These are only a few of the items that need examinaiton when considering the relationship between compensation and the accomplishment expected of salesmen.

Summary

The foregoing is a resumé of the important factors relating to the adoption of a postwar sales and merchandising policy. The list is not complete. There will be additional factors applicable to an individual company or territory. The establishment of policies to attain long-range objectives is a serious and difficult task that requires profound thought and deliberate consideration.

2. Advertising Policy

When conditions return to normal, and during the transition period, advertising and mass education is a "must." Not only is it a tool to be used to recoup War business losses which will occur when military operations cease, but it is a medium by means of which many thousands of newcomers in our midst will be informed of the desirability and essentiality of gas as a fuel.

Tremendous changes have taken place on the West Coast in the past four years in the customer rosters of the utility companies. The enormous population increases in the West, together with the population shifts from the back country to the centers of shipbuilding and aircraft production, have brought thousands of people to the urban areas who previously may have had little or no experience with gas appliances and equipment and especially with modern, high quality appliances and service.

Many prewar customers, who have had long and favorable service from gas appliances, may have doubts that have been aroused by wartime appeals to save and conserve gas. Their whole concept of its dependability and permanency may have been adversely affected. Confindence must be built anew in these customers and advertising is one of the best means of accomplishing this.

National Advertising

One of the foundation stones for complete advertising coverage and a means of giving added emphasis to all local publicity is a strong national magazine advertising program. The

decentralized nature of the gas industry from a manufacturing standpoint requires that full support and encouragement be given to the national advertising program of A.G.A. In addition to this, manufacturers should be induced to increase their national advertising, both through their own direct programs and through their national association.

Competitive manufacturers, even those still engaged in the War business, are advertising in national magazines generously. They are doing this not only for the purpose of keeping their names before the public but to build up and sustain an interest in the products they will again manufacture when their War production job is over. This, of course, has been done to some extent by gas appliance manufacturers but in nowhere near equal volume. During the past several years, for example, the electrical industry has spent in national magazine advertising approximately six times the amount spent for gas appliance advertising through the same media.

For years competition has glamorized and romanced the completely electrified home. The public has been reminded repeatedly that electricity provides "the modern way of life." Such benefits as leisure time, safety, cleanliness, and still others, have been emphasized as exclusive competitive advantages. This mass-educational advertising, coupled with a universal interest aroused during the war in the novel, mysterious, and widely utilized electrical developments, such as electronic devices, heating applications, etc., has more than intrigued the layman. These influences upon the men and women in the Service, many of whom in the future will return to their prewar status—customers of our industry—call for some offsetting action. National advertising of gas and gas utilization should be increased to meet the situation.

Regional Advertising

Advertising by P. C. G. A. on a regional basis performs many of the functions and produces some of the same results as indicated for national coverage. In addition, it supplements the national messages and fills a gap in the coverage which would otherwise obtain. Thus, the regional program should be continued. Both the national and regional copy gives weight and emphasis to all of the forms of individual local advertising.

It is believed that this over-all coverage should be augmented with another medium—radio. Perhaps a gas radio program could best be supported and sponsored on a national basis. If this is not brought about it should receive the serious attention of the P. C. G. A. with the thought that the job should be done in its territory of jurisdiction. A West Coast gas radio program should have the greatest possible degree of support of manufacturers as well as utilities. It is recommended that this project receive further consideration in the ensuing year.

Local Advertising

Without discounting the value of regional and national copy, it must be admitted that local advertising is the most important. Such local and regional advertising sharpens the focus of the buyer's mind, first lured by the colorful national appeals. It is nearer the point of purchase decision. As a matter of fact, it should be the objective of the gas industry in each locality to make up in local advertising what is lacking both in volume and type of message in national advertising. The "Grass Roots" approach to local advertising offers manufacturers, utilities, distributors, and dealers, the opportunity to match or excel competition. Furthermore, because of the varying conditions in each community, localized advertising can be made the most effective because it can be built around specific, concrete programs and policies. Local advertising—to counteract the claims of competition—should sell the benefits of modern gas appliances in terms of their contribution to health, comfort, convenience, and dependability, as well as the very advantages stressed by their competition.

Local Media

The Committee recommends that all forms of local advertising media be employed, i.e.:

Newspapers
Radio
Direct Mail
Store Windows
Billboards

In addition, every advantage from an educational point of view should be taken of the personal contacts made with customers. Personal selling is the most potent form of education and all calls made by salesmen, service people, over the counters, and in the stores, should be fully capitalized to create maximum appreciation of gas appliances.

Theme of Advertising Copy and Responsibility of Different Branches of the Industry

Advertising copy, of course, in a well-rounded program should include all types of messages from straight institutional to the straight merchandising type and combinations thereof. But one theme in particular should be stressed—that is, the economic advantages of gas appliances. These might be summarized as follows:

Appliance	*Economic Advantage*
Cooking Water Heating	Installation Cost Recurring Operating Cost Servicing
Heating Refrigeration	Recurring Operating Cost Servicing

It is believed that the utility can best perform its function by gearing its advertising copy to customer benefits and appliances—use values—rather than by stressing makes of equipment and competitive product features. Manufacturers and dealers, on the other hand must convey to the customer the specific information as to:

a. What make to buy.
b. The price to pay
c. Where to buy
d. Amplification of the benefits featured by the utility advertising.

It is assumed also that utility advertising should blanket in the dealer as much as possible in order to tie in to every selling message the greatest possible number of outlets and points of customer contact.

These ideas are presented—not as the only answer to the advertising problems which face the industry in the postwar period—but as a fairly accurate statement of the aims and objectives of a constructive program to follow.

3. Service Policy

It is generally conceded that the gas industry in the postwar period will face an increasingly aggressive competitive situation from other types of fuel and sources of energy. To successfully defend our position and to gain new ground we must utilize the "shock-troops" of service to the utmost. Good service is the foundation of good customer relations. It is largely through the innumerable daily contacts with customers that their opinion of the utility and its service is determined. The importance of this service cannot, therefore, be depreciated. It contributes to a more extensive use of gas through the efficient operation of existing appliances and equipment. Good service also influences the installation of additional equipment and thereby aids in developing sales. It safeguards the retention of existing

business that may be threatened by competition.

Any service policy that is adopted should have as its foremost consideration two basic objectives:

1. The interests of the customer
2. The protection of the gas industry

To attain these objectives the best possible service must be maintained.

Division of Responsibility

A division of responsibility for the satisfactory performance of appliances and devices should be clearly recognized.

It should be the utility's primary function to deliver gas of high, uniform quality and standard pressure on a dependable basis; i.e., a continuous supply without interruption insofar as firm gas is concerned. This means that the fuel should be free of impurities to a reasonable degree and maintained with a minimum variation in heat content. In addition, the utility is necessarily concerned with safe and efficient utilization of gas and should shoulder its full share of this responsibility.

Manufacturers should be responsible for the proper design and construction of appliances and equipment. Beyond that they should give due consideration to satisfactory performance of their products under typical field conditions. This contemplates proper attention to simplification and standardization of design to the end that servicing problems and future service costs will be held to a minimum.

Dealers should be responsible for the installation and performance of appliances and equipment sold by them. In some areas, because of competitive conditions or commodity costs, it may be necessary for the utility to participate in this responsibility. In the latter situation, any action taken by the utility should be reconciled with the dealer's interests.

When and where all of the functions of producing, selling, installing, and servicing appliances and equipment, together with the supply of fuel thereto, is handled on this sort of a teamwork basis, there should result a community of interest and reciprocity of support and action of the type that builds a strong united industry.

Guarantee

Any service policy should define the seller's responsibility for the performance of new appliances and the fulfillment of the initial guarantee.

All service organizations have suffered from the "headache" of customer misunderstanding and misinterpretation of appliance guarantees. Product guarantees are the responsibility of the manufacturer, but normally he is far removed from the customer. As a result, an indirect responsibility is imposed upon the distributor and the seller in making final adjustments with the ultimate customers.

Manufacturers should review their guarantee practices and specifically define guarantee policy as to who does what. This action will clarify the responsibility that devolves upon the distributor, utility, and the dealer. The industry as a whole, as well as the customers we are serving, will benefit because of fewer misunderstandings and smoother transactions when trouble does arise.

Installation

In general, service by the utility should not include the installation of appliances or other gas piping beyond the meter.

In areas where there are no established installers or where competitive conditions dictate, the utility may have to undertake this work. Any policy adopted should make provision for the participation by installers on a profitable basis.

Maintenance and Repair

Service work requiring maintenance and repair after the official guarantee period has expired should be done on the following basis:

1. Make a legitimate charge for labor and parts.
2. Where practical, make provisions for dealers to handle all maintenance and repair work.
3. If the utilities handle such service it should be without discrimination to all customers.
4. In those areas where commodity costs or competitive conditions are extreme, the utility should continue the practice of rendering a maintenance and repair service that will protect the interest of the utility and the industry as a whole.

Adjustments

The utility should render free adjustment service incidental to the action taken on all complaints and inspection. This service should include all minor adjustments and be available to any customer without discrimination.

Dealers should be encouraged and trained to handle any adjustment work required in addition to their maintenance and repair work.

4. Installment Purchase Financing

Your Committee undertook a survey of the current thinking on postwar installment purchase financing in an endeavor to forecast the probable trends in this field.

From present indications, it would appear that banks and other commercial credit organizations are looking forward eagerly to the financing of installment paper as a sound investment. There is a possibility that FHA or some other Government agency may enter the installment financing business in the postwar period. Regardless of the action taken by any Government agency, there is every indication that private financing institutions will be sufficiently strong to adequately take care of all installment financing demands in this area.

In the development of a postwar financing program, commercial organizations are making provision for:

1. Adequate installment buying plans to prevent a wholesale cashing of War Bonds in the postwar period.
2. Buying arrangements that would permit the public to keep their "nest egg" and purchase major items out of income.
3. Convenient conditions of purchase to meet the needs of returning service people.

Member companies should investigate facilities for appliance financing that will be available through established financing organizations, and thereby position themselves to meet the demands of the postwar period.

Underwriting Installment Papers

From the present outlook and indicated trends, there seems to be no necessity for utilities to underwrite installment paper. The Committee recommends that utilities avoid such action as underwriting should not be necessary on reasonable length of terms (1½ to 2 years). It appears undesirable to have terms longer than this during the seller's market anticipated in the early postwar period. When a buyer's market approaches, the matter of credit and length of terms will need review and possibly some revision.

Should the utility finance its own paper on direct sales, the terms offered to the purchaser should be comparable to those available to dealers from established financing institutions.

Financing Through Mortgage Loans

A movement is under way nationally to include additional major appliances in mortgage loans. There has been much discussion for and against an expansion of this type of financing. The arguments can be briefly summarized.

Arguments in Favor of the Plan

(1) The great need for new postwar housing lies in the lower income brackets. Every time the cost of a house is lowered $1,000 the number of possible buyers increases. There will be more buyers if houses are sold complete with appliances all under one definite financing arrangement.

(2) People are accustomed to buying complete packages—in automobiles, clothes, etc., and will patronize the builder who offers them the same completeness in a new house. It will provide a larger market for those major appliances which everyone wants but cannot afford to buy through the ordinary channels of trade. For example, a house selling for $4,500 under a FHA insured 25-year plan will call for a down payment of $500 and monthly payments of $35.00. If appliances retailing at $455 were installed, the down payments would be increased to $555.00 and the monthly payments to $37.32. If instead the buyer is required to buy the same appliances separately, he would probably pay 10 per cent down and $15.80 for 30 months, increasing his monthly total payments to $50.80 for that period.

(3) FHA already has gone a long way toward making the practice possible. At present 42 state FHA offices declare ranges eligible for insurance under realty mortgages. Refrigerators are eligible in 41 states; dishwashers in 40, garbage disposal units in 34, and Bendix type washers in 18. In the Pacific Coast states the following appliances are eligible. (This is in addition to heating systems and water heaters which are universally considered as a part of the house.)

Arizona—Attached or built-in stoves, attached or cased in refrigerators, and washing machines of the Bendix type.

California—Attached or built-in stoves, attached or cased in refrigerators, dishwashers and garbage disposal units which are a part of the sink installation, and washing machines of the Bendix type.

Nevada—"Plug-in" ranges and refrigerators.

Oregon—"Plug-in" ranges and refrigerators, dishwashers when a part of the sink installation, and Bendix type washing machines.

Utah—"Plug-in" ranges and refrigerators, dishwashers and garbage disposal units which are a part of the sink installation and washing machines of the Bendix-type.

Washington — "Plug-in" ranges and refrigerators.

Arguments Against the Plan

(1) It would disrupt the usual channels of trade in that it would bypass the retail dealer on appliance sales to new homes, especially those built by speculative builders. This might create a dealer problem of more or less magnitude for both utilities and manufacturers—its degree depending upon prewar practice.

(2) Experience with prewar speculatively built housing in which heating systems and water heaters were customarily installed by the builder indicates that other appliances so installed will be bought in quantity, on

'Better look into this ZONE-CONDITIONING'

An outstanding post-war sales opportunity! This is evidenced by the hundreds of inquiries resulting from our advertising in 30 magazines. Countless families plan to build or remodel . . . and they'll want *modern* heating and ventilating.

NEW BOOKLET BEING PRINTED

Supplementing original preliminary folder, we're now publishing a more complete booklet, of interest to both "trade" and public. Write for a free copy today.

COPYRIGHT 1944—PAYNE FURNACE & SUPPLY CO., INC.

Payne ZONE-CONDITIONING

New-day successor to old-fashioned central heating. Gas-fired, circulated warmth . . . cooling summer ventilation . . . *controlled by zones or rooms.* Flexible comfort for large or small homes.

Payne

FURNACE & SUPPLY CO., INC., BEVERLY HILLS, CALIFORNIA

ARMY (E) NAVY

PAYNEHEAT

30 YEARS OF LEADERSHIP

GAS FUEL HAS EVERYTHING

price, and therefore be inferior equipment. This cheapening process will be more costly to the consumer, in the long run, because of greater costs for repairs and replacements. It is feared that the business will not be profitable to the manufacturers who sell it and the equipment will be such that it will impose service problems on the utility and give the user unsatisfactory service and poor impression of gas.

(3) The point has been raised that the plan will lose to the gas industry any price advantage its appliances may have over competitive appliances. This would probably arise only in cases in which the buyer had a choice of appliances and favored the competitive appliance so slightly that he would buy gas if its first cost was considerably less. Of course this difference, financed through the mortgage, would be so small as to be insignificant.

(4) The electric appliance industry has a stronger national sales promotion program than has the gas appliance industry. Insofar as postwar building may become centralized in large national concerns through prefabrication or otherwise, the gas industry might find itself at a disadvantage under this scheme of financing.

(5) The loss of volume by small manufacturers and retailers would cause a shrinkage in taxable income to the Government and would seriously impair the ability of industry to re-employ those returning from the armed services and from war production activities.

(6) It would be unwise, in the postwar period when all industry and trade will be facing many new problems and uncertainties, to attempt a radical and revolutionary change in merchandising that would further dislocate the internal economy of the nation.

Such a movement has many implications that are detrimental to the interests of the Gas Industry. Your Committee has discussed the problems with manufacturers, wholesalers and retailers and has found a unified opinion that the Industry should not endorse this program. It is therefore recommended that the Pacific Coast Gas Association notify the membership of its position in the matter.

5. Training and Refresher Courses for Industry Personnel

For many years the Gas Industry has recognized and continuously stressed the importance of good customer relations. While this phase of our business has received the attention it so richly deserves, we have at times neglected an important adjunct of this program, namely, the training of employees. It is generally agreed the degree of success of any customer relations program is in direct proportion to the enlightenment and number of employees participating. One of our main objectives should be to equip industry employees with a knowledge and understanding of our operations, policies and customer needs so that they can voluntarily accept the responsibility of the maintenance and improvement of our relations with customers.

The Gas Industry can best insure its position and prepare for competition by advocating and undertaking extensive training and refresher courses for employees in all branches of the industry. Because of their leadership in the industry, it is recommended that utilities assist in, and, wherever practicable, provide training media for dealers and their employees.

Training programs should be designed to reach all groups within the industry such as:

1. General Employees of Member Companies
2. Public Contact Employees
3. Dealers and Their Employees

Refresher courses for people returning from the armed services should also be provided.

It is your Committee's recommendation that the program of sales and service personnel training (Utility-Manufacturer-Distributor and Dealer) embrace not only the dissemination of product information and a study of the fundamentals of salesmanship, but also employ the technique of personnel selection.

General Employee Training

It is difficult to be enthusiastic about subjects on which we have little or no knowledge. When the employee knows and understands what makes his Company "tick" and what its policies are, he begins to feel as though he were a part of it. People are more apt to generate enthusiasm about the things with which they are familiar, and of which they have a knowledge. Greater loyalty to the organization can be fostered by increasing the self-esteem of each employee through a better knowledge of his Company and his job.

The subject matter selected for this group of employees should include the following:

1. General information about the industry.
2. Specific information about the employing Company.
   (a) Company organization
   (b) Policies
   (c) Practices
   (d) Price structures
   (e) Competition
   (f) Customer relations
   (g) Products and their utilization
3. Basic information on gas, gas equipment and its utilization.
4. General guides as to the procedure these employees might follow to advance the acceptance and expansion of the use of gas and gas equipment.

Public Contact Employees

We should provide specific training for our public contact employees in the conduct of business transactions with our customers. This entails instruction to provide an intimate knowledge of our rules and regulations and instruction and training in the art of meeting people in a courteous and tactful manner, with the fixed purpose of making it easy and pleasant for our customers to do business with us. By courtesy and friendliness we can humanize and strengthen our customer relations, because people like to do business with their friends.

If through careful and thorough training we can develop a sincere spirit of friendliness on the part of our employees, in their dealings with our customers, we will have established an invaluable relationship that will stand the test of time.

This group, like the general employees classification, should be provided with general data on the industry, their Company and their competition.

Salesmen, home economists and service personnel should also be given a complete and thorough course in product knowledge, i.e., appliance and/or equipment, the fuel itself and its proper utilization.

In addition, they should be given intensive instruction and practice in the technique of selling gas equipment and/or gas services, as well as instruciton in the process of integrating this knowledge into the art and skill of "doing."

Dealer and Dealer Personnel

Instruction for this group should include general information on the industry, the policies of the local utility and their individual employers.

It should also include the product

(Continued on page 40)

Chart Gives Cylindrical Areas Including Ends

By

W. F. Schaphorst, M. E.

Newark, N. J.

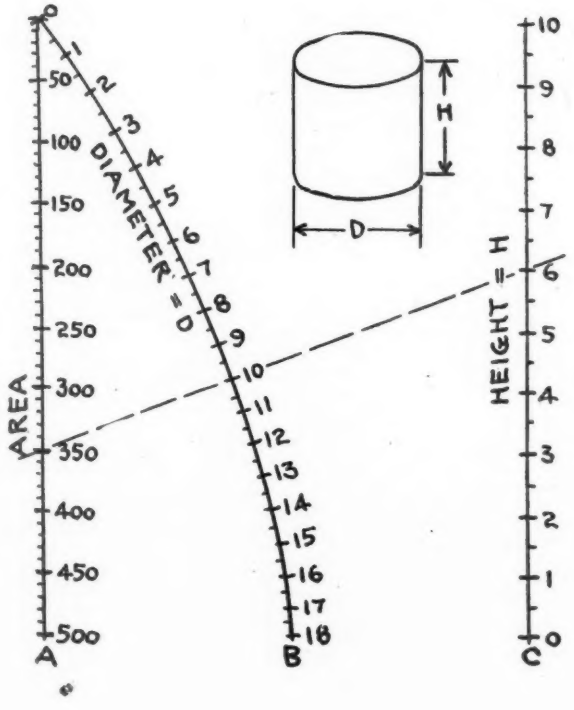
HERE IS A CHART that gives the total number of square inches, square feet, or square centimeters, etc., in any cylindrical object up to 18 units in diameter, and any length. The chart automatically adds the two flat ends and the cylindrical surface.

For example, if the diameter of the object is 10 inches and the height is 6 inches, how many square inches are there in the surface of the object?

The dotted line drawn across the chart shows how easily it is done. The line passes through the 10 in the curved column B, and through the 6 in column C. The intersection with column A shows that the area is 350 square inches.

Of course any unit of measurement may be used. Thus if the diameter and length are in centimeters the area will be in square centimeters. If the diameter and length are in feet the area will be in square feet. It is therefore obvious that the chart will take care of nearly any cylinder.

In the event that the length or height of the object should be greater than given in column C, simply add the necessary length to column C and then proceed as above. Thus if the height is 20 inches and the diameter 5 inches, double the length of column C. Running a line through the 20 in column C, and the 5 in column B, it will be found that the total area is 350 square inches.



Utilities File Plan to Build Gas Pipe Line

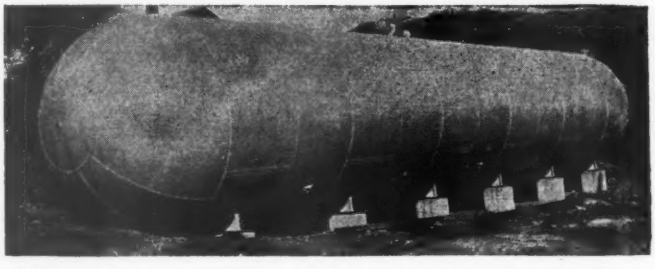
United Light & Railways Co. and its subsidiary, American Light & Traction Co., asked the Securities and Exchange Commission Dec. 15th for authority to form a new corporation under the laws of Delaware, under the name of Michigan Wisconsin Natural Gas Pipe Line Co., "or some other suitable name approved by American Light."

American Light proposes to cause the pipe-line company to be organized and will acquire from its incorporators fifty shares of capital stock, $100 par value, of Pipe Line for $5,000. Pipe Line will have an initial issued capital of $5,000, represented by the fifty shares which American Light seeks authority to acquire.

Organization of Pipe Line and the acquisition of its initial issue of capital stock by American Light is said to be a step in the liquidation and dissolution of American Light already proposed in a plan filed with the commission.

It is proposed that Pipe Line will construct, own and operate a natural-gas pipe line extending from the Hugoton gas fields in Kansas, Oklahoma and Texas, to Detroit, with a branch extending into Wisconsin. It will serve the communities now served by Michigan Consolidated Gas Co., Milwaukee Gas Light Co. and Madison Gas & Electric Co., subsidiaries of American Light, and other communities in Illinois, Iowa and Missouri.

Funds for the construction of the pipe line will come chiefly from American Light's investment in common stock of Detroit Edison Co., and it is contemplated that ultimately all the capital stock of Pipe Line will be owned by Michigan Consolidated, Milwaukee Gas and Madison Gas.



PIONEERS in the design, fabrication and erection of gas plant equipment we originated the High Pressure Gas Holders.
Our designs of today, either vertical or horizontal type, welded or riveted are outstanding in engineering detail and fabrication. They provide an economic means of storage for service in outlying districts, for off-peak storage or to meet emergency demands.
The products and services we offer include much of the heavy equipment entering into gas making, storage, transmission and distribution.
Ask us about our Gas Holder Inspection Service.

The Stacey Manufacturing Company
CINCINNATI, OHIO
ENGINEERS • FABRICATORS • CONSTRUCTORS
Gas Holders—Gas Plant Equipment—Steel Plate Construction—Gas Holder Inspection Service

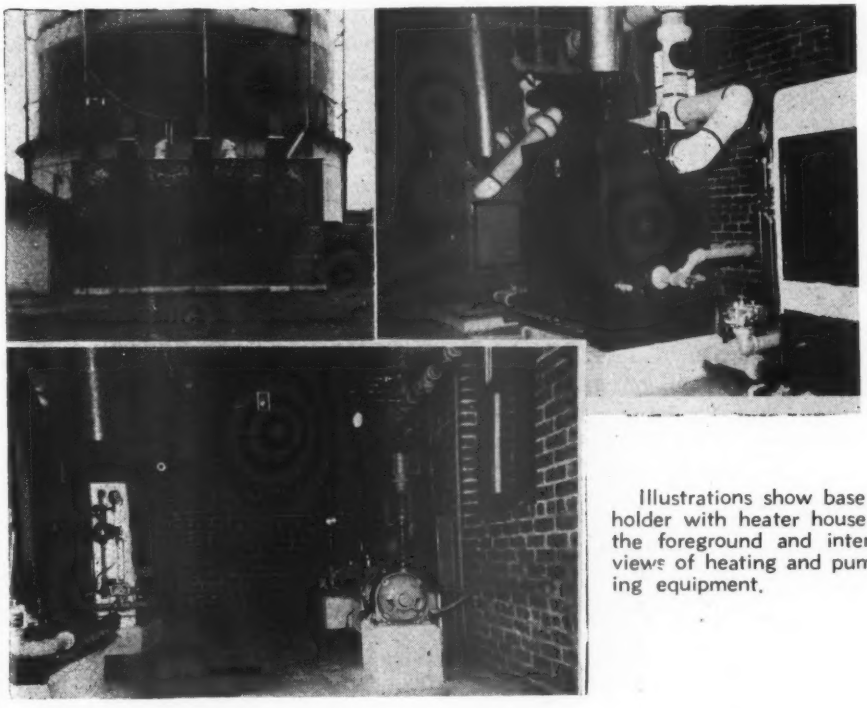
Holder Heating at Adams, Mass.

By
Harold V. McSheen
Northern Berkshire Gas Co.

DURING the winter of 1941 it became apparent that the heating system at the Northern Berkshire Gas Company's automatic gas holder in Adams would have to be improved. A prolonged spell of subzero weather had caused the formation of anchor-ice to the extent that the operation of the holder was endangered. For the second time since the erection of the holder in 1924 it was necessary to resort to the use of supplementary heat furnished by a portable coal-burning steam boiler. In this instance the town's steam roller was pressed into service and tied into the regular heating system until the return of moderate weather.

The new heating plant was built during the past summer realizing the plans that were formed back in 1941. A building of brick construction, more than double the size of the old heater house, was erected and the equipment installed.

Three automatic gas-steam boilers are now ready for use if the need arises. One is an Ideal I G 9, 430,-500 B. T. U. per hour input with steam radiation of 1435 square feet, and one a Peerless 6 S 3,168,000 B. T. U. input with 700 feet of radiation. Both of these had been used in the old plant and were moved into the new location where an Ideal I G 9 boiler with a 430,500 B. T. U. rating was added. The circulating capacity now is 30 gallons of water per minute with a temperature rise of 32 degrees at the heat-exchanger as compared with the former rate of 20 gallons per minute with a 30 degree rise. It is expected that full use of this 50% increase will seldom be necessary.



Illustrations show base of holder with heater house in the foreground and interior views of heating and pumping equipment.

Two Ingersoll-Rand R V H 5 pumps rated at 30 gallons per minute at a 174 foot head, each connected separately to its own #9 type S Whitlock four-path heat exchanger, comprise an important link in the system. Only one pump is used, the other being kept as a spare in case of failure of the first.

The former pumping capacity was 30 gallons at a 142 foot head with the spare pump rated at 30 gallons at a 90 foot head. One Ingersoll-Rand I R V 2 and one I R V 3 were used.

The heated water is pumped into the holder through six separate outlets equipped with ⅛ inch pipe nipple jets in the water just low enough to prevent spraying, usually about two inches.

Great flexibility of operation is assured through the combined twenty one burners in the three boilers, any part of which may be run as a unit according to the changes in the whimsical New England winters.

The plant is usually operated from the middle of November to early March. Gas consumption in the 1943-44 season, which was considered an average winter, totalled 2,800,000 cubic feet. An increase of 25% in consumption is expected to provide an adequate safety factor.

The Adams holder is of two-lift construction with a capacity of 100,-000 cubic feet. It is located near the center of the town six miles away from the gas plant in North Adams from where the gas is delivered through a four inch high pressure line. The Adams territory has a population of twelve thousand six hundred.

PREPARED

600,000 Bushels G.P.M.

IRON HYDROXIDE ready for immediate delivery

GPM
IRON HYDROXIDE

GAS PURIFYING MATERIALS COMPANY INC.
Long Island City 2, New York

COMPLETE GAS PLANTS

●

INDUSTRIAL FURNACES

●

THE GAS MACHINERY CO.
16100 Waterloo Road
Cleveland 10, Ohio

Sales Policies

(Continued from page 37)

and job training indicated above for salesmen, with the proviso that such job training be pertinent and specific to each type of activity.

General

In the training of all groups within the industry it is urged that particular emphasis be given to the necessity of selling ultimate customer satisfaction.

In view of the competitive outlook for the postwar period, the gas industry must go further than product selling if it is to maintain or expand its present position in the field of customer satisfaction.

Even those employees who are not actively promoting equipment and appliance sales should be trained to do everything possible to insure customer satisfaction. They should be instructed that whenever they learn of dissatisfaction they should report such information to the proper department for action.

In the case of dealers and public contact employees, the underlying theme in all their training should point toward action on their part which will achieve the goal of customer satisfaction. High pressure selling methods and a lack of follow-through on the part of public contact employees may create misunderstandings or customer dissatisfaction with equipment or gas fuel. These pitfalls should be guarded against. Methods and procedures to be followed in attaining the desired results should be fully outlined and explained.

Recommended Methods of Training

The purpose of this section is to offer some ideas as to the source of subject material to undertake the various phases of training enumerated above. It is recognized, of course, that no standardization is possible—that "cut and dried" methods all have too many weaknesses and that opinions vary so widely that authorities will seldom agree on exactly the same procedures. Nevertheless, these points might be useful in guiding individual companies in undertaking this important and difficult task.

As to the general information portion of the training, it is suggested that each Company prepare an information manual giving as much detail on the industry and their particular company, its makeup, operations, policies, objectives, etc., as seem suitable. To augment this, and possibly to provide a good foundation of information on the industry, it is proposed that this Association, through its Managing Director, prepare a general information manual covering the important and specific points, advantages and policies of the industry as a whole.

In addition, your Committee recommends that the Association produce and make available to member companies a color, sound film covering some of the following ideas:

1. A brief history of the gas industry.
2. The service traditions of the industry.
3. The comfort and conveniences which are provided in the home as contrasted with conditions of many years ago.
4. The low cost of operation.
5. How free enterprise and private management have succeeded in providing good service at low cost.
6. A glimpse of the organization behind the gas valve, from the wells producing natural gas, through the transmission and distribution systems into the home of the customer or into a business establishment.

As to training methods and material for job training, it is suggested that member companies make full use of a series of instruction pamphlets produced by the Committee for Economic Development, entitled "The Selection and Training of Sales Personnel." This series of pamphlets has been designed for the information and guidance of executives as to the principles to follow in training, and the recommended proven methods of accomplishing maximum results.

As a basic book of material for the use of sales employees, the Pacific Coast Gas Association course entitled "Gas Appliance Selling," prepared in 1941, is recommended. This latter course of training is pertinent to our industry and specific on the points of proper utilization and technique of selling various gas appliances. It provides a sound and extensive background of information from which examples can be drawn and elaboration as to ideas and methods added.

The Association should undertake the development of an Instructor's Manual to be used, by member companies, in conjunction with the Association's course on "Gas Appliance Selling."

To supplement the printed material, your Committee recommends that the Association produce and make available to member companies a series of color, slide sound films covering such subjects as the following:

"Know Your Merchandise"—how to analyze the appliance from the customer's viewpoint.

Selling tools and their use, to include the following: Customer benefit, good quality, appeal to pride, service, etc.

Buying motives and building the sales presentation.

The sales interview in the home and in the store—to include the approach and telling of the sales story.

SUPERIOR GAS METERS

For Sound Values and Continuous Operating Economy

Meters for Domestic and Industrial Use. All Sizes 5B to 60C.
Wet Test and Demonstration Meters — Diaphragms —
Service Cleaners — Provers — Meter Repairs

Write for details and quotations

SUPERIOR METER COMPANY, INC.

167 41st Street Brooklyn, N. Y.

Meeting objections and closing the sale.

Planning for success to include prospect development, canvassing, time control, prospect follow-up, and after sales follow-up.

The foregoing six films would be a visual presentation of the fundamentals of selling and should be very effective in the conduct of any sales training course. The following films would have to do specifically with the type of appliance and would show the application of the fundamentals of salesmanship to each appliance:

Gas Ranges
Automatic Gas Water Heaters
Gas Heating
Gas Refrigeration
Gas Air Conditioning

With the proper use of conference training methods, or a combination technique of instruction-conference training methods, considerable progress is possible. The real test of good training, however, lies in the final step of providing some means of demonstration or training in doing the job. This should involve actual field work and is the translation of theory into practice. It is the final step in converting the art of "knowing" into the art of "doing." In those companies with adequate personnel this phase of the work might properly fall under the direction of trained and competent supervisors.

Selection of Personnel

Since it is the purpose of the industry to develop the highest possible type of personnel to sell its products and services, not only is training a necessary step in the process, but it should be preceded by an equally important one, namely, the selection of potentially qualified people. Reliance solely upon personal judgment in the selection of new employees in the industry has not been too satisfactory in the past and it should be augmented by the use of scientific selection methods if for no other purpose than a check of individual judgment.

Psychological tests of one type or another have been developed for years and considerable time has been available to make observations of their value. Certainly, much remains to be done. Nevertheless, so much progress has been recorded that the Committee believes scientific selection methods are worth adopting—at least to the extent of using those elements of the science which have been rather completely tested.

The impetus which has been given by the Army and Navy to aptitude tests and psychological selection methods in the placement of service people has acquainted millions with the process. It has served also to uncover the weak and strong points of such methods and to "weed out" the unsatisfactory ones. Certainly, industry will be considered decidedly backward if they are not willing to recognize this engineering approach to the human problem. While no particular method is recommended, it is believed that companies in this Association should make their own studies and endeavor to make use of the findings of the past several years.

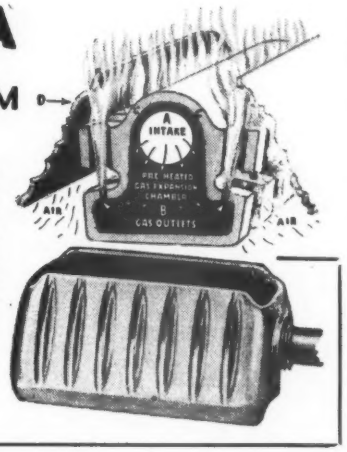
Materials Handling—The Lewis-Shepard Company of 300 Walnut Street, Watertown, Mass., announces its new general catalog, No. 22.

It contains 76 pages and cover with a special file tab and is printed in three colors. This printing process gives the third dimension to pictures of the materials handling equipment shown in operation. Another feature is the large size illustrations of the actual equipment. There are special sections on Lift Trucks, Skid Platforms, Power Fork Trucks, Stackers, Cranes, Floor Trucks, Storage Racks and a large selection of specially built equipment for unusual jobs in production, process and in storage.

COLUMBIA

LITTLE GEM
GAS BURNER

A small unit which may be used singly or in series. Each unit 6½ in. long x 4 in. wide. Wide application of domestic and commercial uses. May be used in round or square steam or hot water boilers, warm air furnaces, Arcola type heaters and circulating heaters. Used commercially for heating tanks, boilers, ranges, ovens, etc. Natural, manufactured, or mixed gas. Complete combustion without pre-mixing. Write for circular.



COLUMBIA BURNER CO.
729 Ewing Street
Toledo 7, Ohio

FOR ECONOMICAL GAS PURIFICATION

Today's increased demands on the Gas Industry from both the production and home fronts has created many new problems in Gas Purification and sulphur corrosion.

In hundreds of plants throughout the country, Connelly Iron Sponge has not only helped decrease costly sulphur corrosion, but has also materially improved gas purification and lowered the operating and maintenance costs.

If you have a problem in gas purification, it will pay you to consult Connelly. A thorough analysis of your problem and unbiased recommendations will be made without obligation.

CONNELLY IRON SPONGE & GOVERNOR CO
CHICAGO ILL - ELIZABETH N

CRUSE-KEMPER COMPANY
AMBLER, PA.

ARMY (E) NAVY
For excellence in production.

We are working on War Equipment and supplying Essential and Emergency Requirements for the Gas Industry.

ARMY (E) NAVY
For excellence in production.

GAS HOLDERS, GAS HOLDER REPAIRS, PURIFIERS
COMPLETE GAS HOLDER INSPECTION SERVICE
41 YEARS OF SOUND
STEEL PLATE CONSTRUCTION

News of the Gas Industry

American Gas Association Technical Section Annual Conferences

The Chairman of the Technical Section, L. E. Knowlton, Providence Gas Company, Providence, R. I., announces that as a result of action taken at the organization meetings of the Section held recently in New York, and approved by the Executive Board at its last meeting, the following arrangements have been made:

Distribution Conference — The Twenty-Second Annual Distribution Conference will be held at The Stevens Hotel, Chicago, Illinois, Wednesday, Thursday, and Friday, April 4, 5, 6, 1945. The Chairman and Vice Chairman of the Distribution Committee are T. H. Kendall, Equitable Gas Company, Pittsburgh, Pa., and J. H. Collins, New Orleans Public Service, Inc., New Orleans, La.

Public Utility Motor Vehicles Conference — The Fifth Annual Conference on the Operation of Public Utility Motor Vehicles will be held concurrently with that of the Distribution Conference at The Stevens Hotel, Chicago, Illinois, April 4, 5, 6, 1945. The officers of the Committee are: S. G. Page, Chairman, Equitable Auto Company, Pittsburgh, Pa., and B. D. Connor, Vice Chairman, Boston Consolidated Gas Company, Boston, Mass.

Joint Production and Chemical Committee Conference—The Eighteenth Annual Joint Conference of the Production and Chemical Committees, sponsored by the Technical Section, and the Manufactured Gas Department, of which E. J. Boothby, Washington Gas Light Company, Washington, D. C., Vice President of the Association, is Chairman, will be held at the Hotel Pennsylvania, New York, N. Y., Monday, Tuesday, and Wednesday, June 4, 5, 6, 1945. The Committee Chairmen and Vice Chairmen are: Gas Production Committee —R. Van Vliet, New York and Richmond Gas Company, Stapleton, S. I., N. Y., Chairman; and Samuel Green, The Brooklyn Union Gas Company, Brooklyn, N. Y., Vice Chairman; Chemical Committee—Dr. C. W. Wilson, Consolidated Gas Electric Light and Power Company of Baltimore, Baltimore, Md., Chairman, and W. R. Fraser, Michigan Consolidated Gas Company, Detroit, Michigan, Vice Chairman.

CONVENTION CALENDAR

January

10 *New England Gas Association,* Operating Division, Hotel Statler, Boston.

11-13 *Louisiana Engineering Society,* Annual Meeting, St. Charles Hotel, New Orleans.

February

8-10 *American Gas Association,* Domestic Gas Research Conference, Hotel Statler, Cleveland.

March

7-9 West Coast Domestic Gas Research Conference, Los Angeles, Calif.

29-30 *American Gas Association,* Industrial and Commercial Gas Conference, Toledo, Ohio.

April

4-6 *American Gas Assn.* Distribution Conference, Stevens Hotel, Chicago, Ill.

4-6 *American Gas Assn.* Motor Vehicles Conference, Stevens Hotel, Chicago, Ill.

(wk.) 9 *Midwest Gas Association,* St. Paul or Omaha.

9-10 *Midwest Power Conference,* Palmer House, Chicago.

17-19 *Southwestern Gas Measurement Short Course,* Norman, Okla. (Tentative dates.)

May

7-8 *American Gas Assn.* Natural Gas Department, Annual Meeting, Hotel Gibson, Cincinnati, Ohio.

7-11 National Fire Protection Association, Annual Meeting, Palmer House, Chicago, Ill.

June

4-6 *American Gas Assn.* Joint Gas Production and Chemical Conference, Hotel Pennsylvania, New York, N. Y.

19-22 *Canadian Gas Association,* Victory Convention, Murray Bay, Quebec.

Luzerne County Gas Announces Executive Changes

Luzerne County Gas and Electric Corporation announced in December the retirement, at his request, of R. R. Van Horn as President of the Company. Charles E. Warsaw was elected to succeed Mr. Van Horn, effective December 31.

Mr. Warsaw, who now becomes President, has been Vice-President and General Manager since April, 1944. He is a graduate Electrical Engineer of Iowa State College and since 1917 has devoted all of his activities to public utility work in electric and gas operations and construction work. He came to Luzerne County Gas and Electric Corporation as Superintendent of the Electrical Department in 1923, following employment in gas and electric subsidiaries with The American Gas Company dating back to 1917.

Mr. Warsaw has been active in the work of securing new industries in the Wilkes-Barre territory, being Vice-President of the Chamber of Commerce in charge of this work.

Mr. Van Horn will continue as a member of the Board of Directors of the Company. He has been associated with Luzerne County Gas and Electric Corporation or its predecessor companies for more than 45 years.

Gas Turbines on Program of Midwest Power Conference

A session on the gas turbine, a new type of prime mover expected to play an increasingly important role after the war, will be included for the first time on the 1945 program of the Midwest Power Conference, Staton E. Winston, conference director, has announced.

Sponsored by Illinois Institute of Technology, where Mr. Winston is associate director of the mechanical engineering department, the conference will be held April 9 and 10 at the Palmer house. An attendance of 2,000 to 2,500 is anticipated.

Mr. Winston said that the gas turbine has been rapidly coming to the foreground in recent years, due partially to wartime developments. It uses gas as a working medium in the production of power, in contrast to older types of the turbine, which use steam.

Various designs of the gas turbine, many of which are now in service, will be discussed at the conference. Problems involved in their utilization will also be taken up.

"It is anticipated that this most recent type of prime mover will gain great headway in the postwar era," Winston said.

Ferguson Appointed Executive Director Independent Nat. Gas Assn.

John A. Ferguson, for the past nine years a member of the Missouri Public Service Commission, has accepted appointment as Executive Director of the Independent Natural Gas Association of America, it was announced Dec. 19th by E. Buddrus of Chicago, President of the Association.

The appointment became effective January 1, 1945, and as soon thereafter as possible, Mr. Ferguson will open offices for the Association in Washington, D. C.

Ferguson is a graduate of Indiana University with a degree in Law. He became a member of the Missouri Public Service Commission in 1935 and has served with the Commission since that time. He has achieved national recognition in his work with the Missouri regulatory body and in his activities with the N.A.R.U.C.

Association offices are in Oklahoma City with Charles L. Orr, Secretary, in charge.

Lyle C. Harvey Speaks on Prestige for Postwar Products

The influence of war economy during which everything has been sacrificed for volume production may lead to disastrous results when American industry returns to civilian goods production, Lyle C. Harvey, of Cleveland, president of the Bryant Heater Co., told members of the Cooking and Heating Institute at their annual meeting in the Netherlands Plaza Hotel in Cincinnati, December 7.

Mr. Harvey stated in part: "Most manufacturers normally make two lines of their product," Harvey said, "one of high quality and comparatively high price, the other designed to meet competition.

"The postwar period will provide an unequalled opportunity for manufacturers to go slow on the highly competitive items and build prestige and reputation on quality goods. Since the scarcity of materials is bound to carry over for some time after the war, this is the soundest method of carrying a business through the uncertain times ahead. Out of every difficult period such as we shall be entering, some business men inevitably find a way of turning adversity into opportunity.

"Instead of complaining and criticizing because conditions are as they are and as we know they will continue for some time, American industry should face its manufacturing and marketing problems boldly and try to do a real job of salesmanship and cost reduction.

"The competitive situation will be temporarily unsound because we have been living in a false economy for several years during this war. We can't find a ready-made solution for competitive problems of the future but the solutions can be worked out if we are willing to devote energy and forethought to them."

Institute of Gas Technology Staff Additions

Several staff additions to the Institute of Gas Technology, have been announced by John I. Yellott, director.

Russell T. Griffith, instructor in chemical engineering at Illinois Institute of Technology. Miss Eleanor Landon, who is a graduate of Mundelein college and holds a master's degree from the University of Illinois and Masanobu Miyaji who has worked as a chemist for the Marblehead Lime company and as a laboratory assistant for the Chicago Biological Research laboratory.

Dr. Eric F. Lype, who will serve as a consultant for the institute's gasification projects and will do theoretical work on appliance projects, was formerly research engineer for the Combuston Engineering Company, New York, and the De Laval Steam Turbine Company, Trenton, N. J.

Mrs. Ann Lesh, for three years librarian at the Armour laboratories, has been appointed research librarian.

Joining the staff as assistant chemical engineers are E. A. Walsh and John F. Schnacky.

Direct Air-Gas Heat

Industrial Gas Research bulletin covering research in physical and metallurgical effects of high speed direct air-gas heat on metals has been issued by American Gas Association as project number 48.

In this 32 page bulletin, the Committee on Industrial Gas Research, John W. Batten, Chairman, presents the result of research work carried out for them by Selas Corporation of America.

Studies are presented on the effects of high heating speeds on typical ferrous and non-ferrous metals. Manufactured gas of 530 Btu. was used on all experiments.

W. S. Redpath Joins Ketchum, MacLeod & Grove

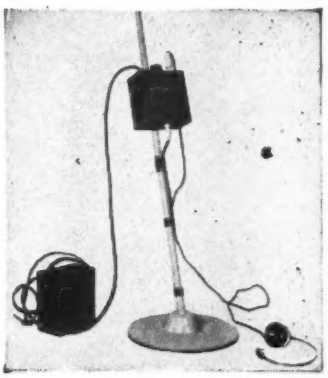
W. Stanley Redpath, sales promotion manager of the Equitable Gas Company, Pittsburgh, has joined Ketchum, MacLeod and Grove, Inc., Pittsburgh advertising agency, as account executive.

Mr. Redpath was graduated from Queens University, Belfast, Ireland, with a degree in mechanical engineering. He joined the sales staff of Westinghouse Electric and Manufacturing Company in 1925 and left in 1928 to engage in sales promotion for the Duquesne Light Company, Pittsburgh. He joined Equitable Gas in 1939.

1945 MODEL!

Bob White

ELECTRONIC BOX LOCATER



Rapidly locates all metal utility service boxes

Curb Boxes — Street Boxes
Meter Boxes — Drip Boxes
Manhole Lids, etc.

This light weight type gives signals (even in the dark) *as fast as you can walk.*

It even locates demagnetized boxes which dipping needles cannot find.

In this new model, the amplifier case is mounted on the handle of the search coil to give more depth penetration.

Dry cell batteries are in a separate case with leather shoulder strap.

Write for bulletin or phone for data.

Manufactured by

S. F. FERGUSON
11 HILL STREET, NEWARK 2, N. J.

THE GOODMAN STOPPER

Now has the "Z" handle for easy manipulation. When locked in place it holds. Stopper cannot slip. Gas cannot pass. Adjusted in 30 seconds.

Ask for circulars on this and other distribution equipment.

Nearly a half century of service to the Gas Industry.

The Reliable Shut-Off for Street Mains

Safety Gas Main Stopper Co.
523 Atlantic Avenue, Brooklyn, New York

Lefferson Heads A.G.A. Rate Committee

Appointment of L. R. Lefferson, head of the Rate Department of Ebasco Services, Inc., New York, N. Y., as chairman of the Rate Committee of the American Gas Association has been announced by J. French Robinson, president of the Association.

L. R. Lefferson

An outstanding authority in the field of rate engineering, Mr. Lefferson has an extensive background of operating experience as well as participation in Association committee work. He served as a member of the A.G.A. Rate Fundamentals Committee until it was discontinued in 1935 and, since 1939, has been a member of the Rate Committee.

The Rate Committee is composed of rate and valuation experts who meet regularly to consider developments affecting utility rates and related matters. From time to time the committee has issued valuable reports on gas industry matters.

Recommendations of Executive Board, A.G.A.

The Executive Board of the American Gas Association has recommended to the gas utility industry certain sales policies for their consideration in promoting the sale of gas appliances and gas service. These policies, which are offered as suggestions only, follow:

"It is believed that gas utilities must undertake and continue full responsibility for leadership in gas appliance sales in their respective communities to the end that the inherent superiority of gas as a fuel shall be maintained; accordingly the following recommendations are made:

"1. That national, regional and state gas associations should cooperate with all similar national organizations in all allied fields.

"2. That gas utilities should perform the task of promoting the sale of new and improved gas appliances to the point of assured customer acceptance.

"3. That as customer acceptance materializes, the activities of the gas utility should be continued in such a manner as to maintain continuing acceptance of gas service and to increase the flow of gas appliance sales through normal channels of distribution.

"4. That the gas utility should assume responsibility for gas appliance sales training of personnel, (utility and dealer alike), utilizing the cooperation of gas appliance manufacturers.

"5. That the gas utility should assume responsibility for training dealers in installation and service techniques, utilizing the cooperation of gas appliance manufacturers.

"6. That the gas utility should keep dealers informed as to the increased merchandising opportunities offered to them in the gas appliance field, e.g., additional lines, new products, new rates, etc.

"7. That the gas utility should inform all concerned with home construction and financing on all matters having to do with gas equipment and gas service.

"8. That the gas utility should provide or make available to dealers facilities for financing gas appliance installment sales as attractive and advantageous as the utility's own.

"9. That the gas utility should initiate and promote appliance sales campaigns with cooperating gas appliance dealers.

"10. That home service and all other aids maintained by the gas utility should be made available to cooperating gas appliance dealers.

"11. That the gas utility should provide full information as to its policies and practices so as to establish a relationship of mutual understanding and confidence with the dealers."

Eastern Gas & Fuel Associates Elects J. W. Tyson II, Vice Pres.

Announcement was made December 18th of the election of James W. Tyson, II, as vice president of Eastern Gas and Fuel Associates, Boston, Mass. Mr. Tyson in 1934 became assistant treasurer of Koppers Coal Company, later the Koppers Coal Division of Eastern Gas and Fuel Associates. He will continue to make his headquarters in Pittsburgh.

Ronald E. Reitmeier

The Girdler Corporation, Louisville, Ky., has announced the appointment of Dr. Ronald E. Reitmeier to the post of Director of Research and Development of its Gas Processes Division. Dr. Reitmeier will have charge of the division's comprehensive development program, designed to improve gas purification and manufacturing processes.

Estate Stove Co. Appoints Florida Distributor

S. C. Bernhardt, Vice-President in Charge of Sales, The Estate Stove Company, Hamilton, Ohio, recently announced the appointment of the Pensacola Appliance Company, Pensacola, as Estate Heatrola appliance distributor in the Northwest territory of Florida.

High Pressure Gas Main for Vancouver, B. C.

Vancouver's first large size high pressure gas main is being installed by the B. C. Electric Railway Company at a cost of $60,000. The main will run from the company's gas plant at Keefer and Main Streets, to Sixth and Quebec, a distance of approximately a mile and a quarter.

The new main will be of steel pipe, 12 inches in diameter, and will be buried 3 feet under ground.

E. H. Rohrer, manager of the Gas Department of the B. C. Electric, states that the new main will permit an increase in production of gas made necessary as a result of the rapid growth in consumption, particularly for industrial purposes. No enlargement of the gas plant is anticipated at the moment, but the laying of a main with a maximum pressure of 20 pounds will, it is believed, maintain satisfactory service for industrial gas in the False Creek area as well as increasing pressure for domestic consumption for the West Point Grey and South Granville zones.

Dawson Promoted to Gas Sales Manager

G. S. Dawson has been promoted to the position of gas sales manager, B. C. Electric Railway Company, Ltd., Vancouver, B. C. He joined the B. C. Electric in January of 1927 as a designing engineer in the construction department, and in 1932 was transferred to the sales department as merchandise sales engineer.

Dr. R. S. Taylor

Dr. R. S. Taylor, chief engineer for Servel Inc., Evansville, Ind. peacetime manufacturer of the Servel Gas Refrigerator, addressed the annual meeting of the American Society of Refrigerating Engineers in New York City on December 11.

The title of Dr. Taylor's talk was, "Heat Operated Absorption Units." In his paper Dr. Taylor covered the development of the absorption refrigerator from the time of the conception of the Platen Munters System up to the present day.

PEMCO-MERCO DISTRICT MANAGERS ATTEND CONFERENCE
Left to right, front row: H. Boezinger, C. R. Zeskey, Col. W. F. Rockwell, President, A. J. Kerr, General Sales Manager, M. J. Harper.
Back row: W. S. Andrews, C. C. Moore, P. C. Kreuch, M. D. Gilbert, F. C. Arens, C. K. Madison

Pittsburgh Equitable-Merco Nordstrom Holds Conference At Home Office

The Annual Sales Conference of Pittsburgh Equitable Meter Company-Merco Nordstrom Valve Company was held at Pittsburgh headquarters from November 10th to 14th. Attending were the District Managers from the sales and service territories; the Factory Managers from the manufacturing plants, and numerous key men from the company's engineering, sales, and executive staff. The meetings, presided over by Colonel W. F. Rockwell, President, and A. J. Kerr, General Sales Manager, were devoted to the many phases of design, manufacture, and distribution of the diversity of measurement and control products that are made by the combined firms. National trends affecting present day industry as well as post-war plans for resuming normal production were discussed.

Representing the district offices at the conference were District Managers C. C. Moore, Atlanta; F. C. Arens, Boston; G. H. Gleeson, Brooklyn; P. C. Kreuch, Chicago; C. K. Madison, Houston; C. R. Zeskey, Kansas City; H. Boezinger, Los Angeles; M. J. Harper, New York; W. S. Andrews, Pittsburgh; and M. D. Gilbert, Tulsa.

Factory Managers present included L. A. Dixon, Oakland, California; H. S. Rockwell, Hopewell, New Jersey; and A. R. Whittaker, Brooklyn, New York.

Lt. W. F. Rockwell, Jr., Vice President, was able to attend some of the sessions while on leave from his Army post.

Dickey Appointed Chief Engineer Bailey Meter Company

Bailey Meter Company, Cleveland, Ohio, announces the appointment of P. S. Dickey as Chief Engineer. Mr. Dickey will supervise all Engineering, Research and Design activities for the Company. He will be assisted by Mr. H. H. Gorrie, Assistant Chief Engineer, and R. E. Clark, Manager of Contract Engineering.

H. H. Gorrie, who has been appointed Assistant Chief Engineer, is a graduate of Rensselaer Polytechnic Institute and has been associated with Bailey Meter Company continuously since his graduation in 1927.

R. E. Clark is a graduate of the University of Kentucky and has completed over 20 years' service with Bailey Meter Company in the capacities of Field Engineer, Meter Engineer and Automatic Control Engineer.

F. T. Ketchum Sales Mgr. Caloric Gas Stove Works

Caloric Gas Stove Works, Philadelphia and Topton, Pa. announces the appointment of Frederick T. Ketchum as Sales Manager, according to a notice released recently by Julius Klein, General Sales Director of the Company.

Mr. Ketchum comes to Caloric after more than three years of service with the Government as Consultant Chief of the W.P.B. Purchasing Policy Division, covering plumbing, heating and cooking equipment.

In August, 1941, Mr. Ketchum joined the staff of Donald Nelson and since that time has coordinated planning and purchasing of supplies for the Armed Services as well as other Governmental agencies.

F. T. Ketchum

In March, 1944, Mr. Ketchum was appointed Special Assistant to the Deputy Vice Chairman of W.P.B. to administer policies and procedure of the Production Urgency Committees, as they are related to critical war production.

BARBER BURNERS
For All Gas Appliances

We have the facilities and experience for designing and building the exact type and size of burner unit to fit any gas appliance, using natural, manufactured, Butane or bottled gas. We cooperate with any reliable manufacturer in the necessary development and laboratory testing, and in acting as continuous source of supply for his burner units.

Latest Catalog on request.

THE BARBER GAS BURNER CO.
3704 Superior Ave. Cleveland, O.

CLEVELAND

"A" TYPE METERS
"B" TYPE METERS
DIAPHRAGMS

Cleveland Gas Meter Co.
ESTABLISHED 1895
2009 Rockwell Ave., Cleveland 14, O. Phone CHerry 2351

Mr. William G. Hamilton, Jr., Asst. Manager in charge of Philadelphia plant of American Meter Company, delivering acceptance speech at ceremonies awarding Army and Navy "E". Seated on the platform are Mr. Norton McKean, President of American Meter Company, at the left, and guests.

"E" Award to American Meter Company

For "great accomplishment in the production of war equipment," American Meter Company's Philadelphia plants were awarded the Army-Navy "E" on November 27th. The presentation was made to the employees at Town Hall, Philadelphia.

Mr. Norton McKean, President of American Meter Company, presided as chairman. In his brief acceptance address, Mr. William G. Hamilton, Jr., Assistant Manager in charge of the Philadelphia factories, stressed the loyalty and patriotism of fellow workers whose efforts had brought recognition by the War and Navy Departments, drawing attention to the fact that for 106 years the organization had concentrated upon the development and manufacture of meters, and that their production goals on war work had been achieved through complete conversion of equipment, retraining of skilled meter makers and the employment of additional workers.

Edward B. Mockel has rejoined the Sales Promotion Department of Servel Inc., Evansville, Ind., after a two-year leave of absence.

Before the leave of absence, during which time Mr. Mockel was an expediter for Henry J. Kaiser Inc., shipbuilders in Providence, R. I., he was sales promotion representative for Servel's New England district.

Williams Oil-O-Matic Receives Fourth Army-Navy "E" Award

Williams Oil-O-Matic Heating Corporation, Bloomington, Illinois, has announced the receipt of a fourth Army-Navy "E" Production Award.

In commenting on this latest official recognition of Williams war work accomplishment, Mr. W. A. Matheson, President, said, "Naturally, we are very proud to have again won this coveted honor. But what particularly pleases the men and women of Williams is the fact that they achieved this goal of continued excellence in war production without interrupting the plans that will put new Williams Air-O-Matic Equipment in the field just as soon as materials are available and government regulations permit."

B. H. Giaretta on Staff of Detroit-Michigan Stove Co.

John C. Pankow, Detroit-Michigan Stove Company's Director of Sales, has announced the appointment of B. H. Giaretta as Sales Manager of that company's Northern Division. This division includes the Chicago Metropolitan Area, the state of Wisconsin, and the upper peninsula of Michigan.

For the past sixteen years, Mr. Giaretta has been associated with the Boston Store, Chicago, as Major Appliance Buyer.

GAS PLANT EQUIPMENT

UGI REFINERY GAS REFORMING PROCESS
UGI NATURAL GAS REFORMING PROCESS
UGI HEAVY OIL PROCESS

GAS DISTRIBUTION

PIPE LINE CONSTRUCTION

THE U.G.I. CONTRACTING COMPANY
A DIVISION OF
UNITED ENGINEERS & CONSTRUCTORS INC
NEW YORK PHILADELPHIA CHICAGO
MAXIMUM RETURN TO CLIENT PER DOLLAR EXPENDED

CHEMISTS — ENGINEERS PHYSICISTS

Men interested in careers in industrial research are urged to write us giving details of training and experience—Essential work with promising postwar future offering opportunities for professional growth.

Battelle Memorial Institute
Columbus 1, Ohio

Dresser Industries to Acquire Three Additional Companies

Acquisition of three new companies, expanding Dresser Industries, Inc., to 13 members, has been authorized by Dresser directors, President H. N. Mallon announced in December.

The companies to be acquired are the Day & Night Manufacturing Co. of Monrovia, Calif., the Payne Furnace and Supply Co., Inc. of Beverly Hills, Calif., and Kobe, Inc. of Huntington Park, Calif. The acquisition will be accomplished by an exchange of stock and will be effected about Feb. 1, 1945 if approved by stockholders of the three companies. Dresser stockholders recently authorized an increase in capital stock to 600,000 shares, a portion of which is unissued and will be used to consummate the agreement.

"Products of each of the companies will complement those of the present Dresser units," Mr. Mallon said. "Day and Night manufactures a line of gas-fired hot water heaters and Payne produces steel furnaces and floor furnaces for the consumer durable goods field. These will supplement products of the Bryant Heater Company, enabling distributors to offer services over a broader market.

"Kobe, Inc. is a producer of hydraulic deepwell oil pump systems, which will add similar diversification to equipment manufactured by Pacific Pumps, Inc. and International Derrick & Equipment Co."

Plants of the various companies comprising Dresser Industries, Inc. are located in New York, Pennsylvania, Ohio, Indiana, Texas, California and Ontario.

"CP" Manufacturers Appoint Hill Agency

The appointment of Hill Advertising, Inc., 250 Park Avenue, New York, to handle advertising and promotion of gas ranges bearing the "CP" seal has been announced by James I. Gorton, "CP" Promotional Director.

In preparation, for the use of gas utilities and for gas range dealers, is a "CP" program of advertising in 18 trade publications covering all major range dealers; newspaper mats, consumer booklets, presentations, and a comprehensive line-up of related promotion material for use by utilities to resell and presell the "CP" program to consumers and dealers alike.

Head of the Hill Agency is Weston Hill who has a long record of successful promotions of both gas and electric appliances. He has worked closely with large distributors and retailers in the appliance field, and with utilities.

Hill Advertising, Inc. is organized along entirely new lines, and in its work for clients goes far beyond the mere running of advertisements. Mr. Hill's policy is to go deep into sales and dealer promotion work, as well as publicity and public relations.

In Mr. Hill's opinion, the idea behind the "CP" symbol is far and away the soundest idea for postwar appliance merchandising and selling thus far put into operation by the appliance industry.

"The 'CP' seal is the first impartial buying guide the consumer has ever had to quality performance and overall value in major appliances. Since the 'CP' Program already proved itself prior to the war, it is a tested program that will be available as soon as restrictions are lifted."

Ointment for Major and Minor Burns

Bulletin 134 summarizes the value of Hydrosulphosol Ointment offered to industry by the Davis Emergency Equipment Co., 45 Halleck Street, Newark, N. J.

The Ointment and liquid solution have passed a thorough and intensive study over a long period and have been used successfully in hospitals for the past four years on all types and degrees of burns.

Major healing features are quick relief from pain, infection control, acceleration of healing, non-toxic safety and the stimulation of new tissues or repair of burned ones to check the danger of disability.

Wolfert of Blaw-Knox Now with Export Dept.

Paul J. Wolfert, assistant to the manager of construction equipment of the Blaw-Knox Division of the Blaw-Knox Company, Pittsburgh, Pa., has been promoted to export department engineer.

He took up his new duties in New York on Jan. 2, and will assist H. T. Schwier, export manager. Mr. Wolfert will be engaged in the promotion and sale of all the various Blaw-Knox products for the export trade.

After being employed by a number of firms as a construction equipment engineer, Mr. Wolfert joined Blaw-Knox as a sales engineer at Pittsburgh in 1939, where he was in charge of a territory comprising several eastern states. In the spring of 1942, he was promoted to assistant to the manager of construction equipment.

Last year Mr. Wolfert was asked to serve the U. S. Army Corps of Engineers as an expert consultant, and spent some time in the European theater of operations, advancing the construction of airdromes and depots. He is a professional engineer, registered by the state of Ohio.

Clark Bros. Company Appointments

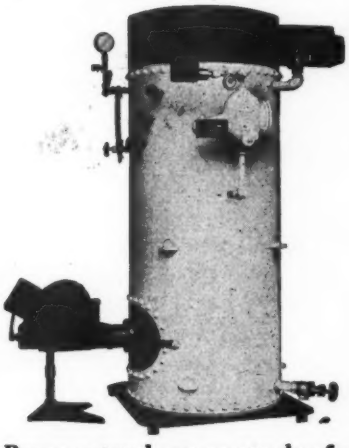
Clark Bros. Co., Inc., Olean, N. Y., announce the appointment of Mr. T. F. Hudgins, New York export manager, and Mr. R. R. McCartney, New York district manager, located in Clark Bros. Co.'s new offices in the Chanin Bldg., at 122 E. 42nd Street, New York 17.

Acid-Proof Apron

A new heavy duty acid-proof apron, made with a treated fabric combined with a new plastic by a special calendering process which impregnates the fabric so the product is acid proof throughout is announced by The B. F. Goodrich Company, Akron, Ohio.

The apron is made in one size only, 35 inches by 47 inches, full. It weighs 1¾ pounds complete with sturdy ⅞ inch wide tape, criss-cross shoulder design, attached securely with reinforced grommets at top and side, and with edges hemmed throughout. It can be easily washed or cleaned without harm to its acid-proof qualities.

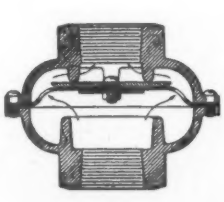
LATTNER
GAS — OIL BOILER
3 HP to 35 HP.

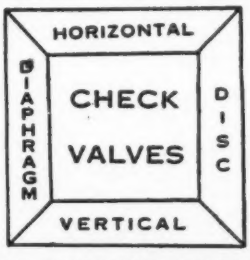


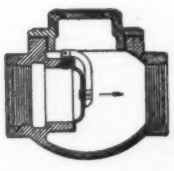
Burns natural gas or regular furnace oils with equal efficiency using same burner.

P. M. Lattner Mfg. Company
Cedar Rapids, Iowa

Pressure Controls for Gas and Air







NORWALK VALVE COMPANY

85 Spring St. **South Norwalk, Conn.**

Caloric Gas Ranges Feature Single Point Ignition

Caloric gas ranges, equipped with "single point ignition" are now on the market in a limited quantity.

Development of single point ignition culminated many months of laboratory research by the American Gas Association Appliance Laboratory, the Philadelphia Gas Works Laboratory and others, with the cooperation of the Caloric Gas Stove Works of Philadelphia.

Single point ignition means that with one "matchless" operation, and with one small, economical pilot light, any burner can be ignited automatically, even the oven and broiler burners. The only operation necessary is to turn the oven and broiler gas cocks, or the gas cocks for the top burners.

G. Dwight Sutherin

"We are proud of the contribution Caloric has made to the joint efforts of the various laboratories in the development of this new feature," said Julius Klein, General Sales Director of Caloric Gas Stove Works.

The appointment of G. Dwight Sutherin as Regional Sales Manager was announced January 2nd by Mr. Klein.

A gas engineer of long and varied technical training and experience, Mr. Sutherin since 1929 has devoted himself exclusively to merchandising and sales promotion in the gas industry. He has directed sales activities either in the public utilities field or in private industry in Kansas, Iowa, Nebraska, Missouri and Illinois.

Mr. Sutherin recently resigned as Sales Manager for the American Gas Machine Company, Albert Lea, Minnesota.

With headquarters in Chicago, he will supervise Caloric sales activities in the central part of the country where he is widely known in the industry.

General Controls Co. Appoints Field Sales Engineers

General Controls Co., Glendale, California, announces the appointment of James King as Field Sales Engineer in their New York Factory Branch, 101 Park Avenue. Mr. King will serve users of automatic controls, particularly in industrial fields, throughout Metropolitan New York. His background includes many years of successful sales and service experience with Jenkins Valves in New York and New Jersey.

Paul B. Sagar has been appointed Eastern Field Engineer. Working out of the Cleveland Factory Branch, he will devote the major part of his time collaborating with Eastern appliance manufacturers in working out problems of application and assisting them in test procedures at the American Gas Association Laboratory. He is well qualified for this assignment because of his background as Test Engineer in the Cleveland A. G. A. laboratory.

Further duties of Mr. Sagar's include the inauguration of an educational program for Eastern utilities, manufacturers, jobbers, and dealers to acquaint them with the application and installation of General Controls' equipment.

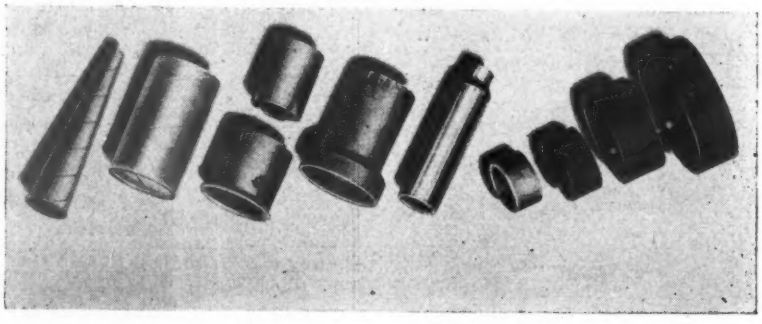
Protection for Threaded and Machined Parts

New convenient internal and external safeguards of threaded and machined parts, fittings, etc., are among the latest products of Precision Paper Tube Company, 2033 West Charleston St., Chicago 47, Illinois.

These new thread protectors and dust caps are made of spiral-wound fiber, kraft paper, or cellulose acetate, under heat-treated compression. They are designed and constructed for greatest durability in protecting fittings, exposed openings and ends, tubing, a multitude of products—from moisture, rust, dirt, grit, dust or damage in packing, storage or shipping.

They are shaped to the article to be safeguarded—cylindrical, square, rectangular or tapered, crimped, flared or perforated—with tolerances as close as ±.003". Name of part and number, as well as name of manufacturer can be printed in the protector.

Detailed information may be obtained from the manufacturer or by writing to this publication.



Precision Thread Protectors and Dust Caps

Askania Regulator Company

All the stock of the Askania Regulator Company of Chicago, Illinois has been acquired by General Precision Equipment Corporation, 92 Gold Street, New York. The purchase was made for cash but the exact amount involved was not disclosed. The present management of Askania will continue to be in charge of operations.

Askania Regulator Company are manufacturers of hydraulic control systems. These controls are a type used largely in the steel industry for the accurate proportioning of fuel mixtures in blast furnaces and other steel making units. The effective operation of the control apparatus has broad application in many other industrial fields.

P. M. DOWNING

P. M. Downing, Executive Vice-President of Pacific Gas and Electric Company, died Dec. 11 at St. Luke's Hospital after 43 years of service with the one Company.

His death, at 71, brings to a close an illustrious career in public utility engineering and management which had its beginnings in the hard field work of the pioneer days of the electrical industry. Paying tribute to his old friend and coworker, James B. Black, President of Pacific Gas and Electric Company, said:

"P. M. Downing was an unusual man, as big in mind and spirit as he was in physical stature. We who were associated with him for so many years knew and appreciated the unchanging integrity of his thinking, the breadth and depth of his technical and executive knowledge and the rich human qualities of courage, patience, sympathy and understanding with which he was endowed. His great contribution to the public utility industry, to the advancement of which he devoted his life, will stand as his memorial. His loss will be felt deeply by the industry, by this Company, and by every one of our 10,000 employees who has been privileged to know him."

Fight INFANTILE PARALYSIS
1945 JANUARY 1945
S M T W T F S
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29 30 31
JOIN THE MARCH OF DIMES

INDEX TO ADVERTISERS

American Meter Co. 8
American Radiator & Standard Sanitary Corp. —
American Stove Co. ..... —
Assn. of Gas Appliance and Equipt. Mfrs. ... —
Barber Gas Burner Co., The 45
Besse, Osborn & Odell ..... —
Blaw-Knox Company ..... —
Bryant Heater Co. ..... —
Cast Iron Pipe Research Assn., The 22
Clark Bros. Co. ..... —
Cleveland Gas Meter Co. 45
Cleveland Heater Co. ..... —
Cleveland Trencher Co. 24
Coal Carbonizing Co. ..... —
Columbia Burner Co. 41
Connolly Iron Sponge & Governor Co. 41
Cooper-Bessemer Corporation ..... —
Cribben & Sexton Co. ..... —
Cruse-Kemper Co. 41
Detroit-Michigan Stove Co. ..... —
Dresser Industries Inc. ..... —
Dresser Mfg. Co. ..... —
Estate Stove Co. ..... —
S. F. Ferguson 43
Gas Machinery Co. 39
Gas Purifying Materials Co. 39
General Coal Co. ..... —
Harper-Wyman Co. 30-31
Lambert Meter Co., Inc. 27
Lattner Mfg. Co., P. M. 47
Lavino & Co., E. J. 21
Lincoln Electric Co. ..... —
Merco-Nordstrom Valve Co. ..... —
Metric Metal Works 8
Norton Company 16
Norwalk Valve Co. 47
Payne Furnace & Supply Co. 36
Pittsburgh Coal Co. 6
Pittsburgh Equitable Meter Co. ..... —
Reynolds Gas Regulator Co. 27
Robertshaw Thermostat Co. .....Front Cover
Roberts-Gordon-Appl. Corp. ..... —
Roper Corp., Geo. D. ..... —
Safety Gas Main Stopper Co. 43
Semet-Solvay Engineering Corp. 3
Servel, Inc. 4-5
Smith Corporation, A. O. 2
Sprague Meter Co., The .....Back Cover
Stacey Manufacturing Co. 38
Superior Meter Co. 40
Syntron Co. ..... —
United Engineers & Constructors, Inc. 46
Vulcan Proofing Co. ..... —
Wachs Co., E. H. ..... —
West Gas Improvement Co. 27

(Continued from page 24)

If you have a large territory to cover, driving time and car expense is an item. In order to keep this at a minimum certain parts should of course be carried with you, such as veedor counters, pens, pen arms, clutches, intermediate gears, volumetric arms, and bearings and bushings which can be installed right on the job as this will save a trip back to the shop. Other types of repairs generally need more equipment and will have to be taken out from the shop.

The replacing of diaphragms in the large meters should be done in the shop, but there are times when this cannot be done, so they must be replaced where the meter sets. When this is done care should be taken to see that they are straight on the meter, without wrinkles, bands tightened up correctly, and the stroke correct as compared with the tangent link on top of the meter, that there is enough clearance at the end of the stroke to keep the diaphragm from being under tension other than that caused by the pressure of the gas.

Putting diaphragm port gaskets in the small meter sometimes presents a problem in that they slip out. This may be helped and time saved by using dowel pins to hold the gasket in place while the pan is being installed, and then make sure that the screws holding the pan in place are drawn up tight on the shoulder as there seems to be some difference in the depth of the holds.

When trouble develops causing the tangent to slip on the post and meter becomes out of time, the gears should first be marked with respect to each other, then removed and if new bearings and pins are used they may be replaced at the same corresponding position and save time, but if new gears are used they should be set according to the valve opening and then the tangent soldered into place to give the right relation between the valves and the diaphragms, the valves being left in place. It is not wise to move the gears to make a quick adjustment as it may throw the meter out of balance.

When overhauling meters each part should move freely, without binds as these will cause a fake test on the meter, and may either wear itself clear or become worse and in either case would cause trouble.

Along the line of testing, a few words should be said about the recorders which are used on the meters and should be considered a part of the meter as they take the place of the regular index which comes with the meter.

These come in different pressure ranges with different constants. When they are placed on the meter they should be checked to see that they are working correctly before they are left.

After the setting is completed and you make up your report a recheck should be made to see that you have the correct reading, correct chart on, correct clock in the gauge, that the pens are both marking, that the pressure pen is correct, that the cycle hand is on the correct cycle, and that the correct company number, serial number, and the constant are listed.

All of these are essential and should be on your set and test sheet for the accounting department, which is responsible for making up the bills to the customer.

Before leaving the gauges some of the ills should be mentioned:

1. Veedor counters become dirty and stick, causing the drive gears to slip on the shaft or pull the dog loose on the top of the index head.

2. A worn place in the cam caused by the knife edge of the arm which comes in contact with it each revolution under constant pressure. If the pressure varies an error is found in the reading due to the travel of the arm.

3. Worn clutch which will not rotate the clutch shaft and in turn ro-

N.E.G.A. Managers

(Continued from page 18)

3. Only those expenses in excess of this $1 "minimum" should be charged to acquire new loads.

Recommendations

1. Where possible, each company should determine its minimum New Business expense, carefully justifying the methods used to calculate each item.

2. Where it is impossible to allocate total New Business expense properly to "minimum" and "load building", the figure of $1 per total customer should be accepted as the minimum cost based upon extensive available data.

Effects of Aggressive New Business Efforts vs. Passive Ones on Results

Presented by: J. J. McKearin, Manager of Domestic Sales, Boston Consolidated Gas Co. Prepared Discussion by: John West, President, Worcester County Electric Co.

Conclusions

1. Companies spending above average on New Business show:

(a) larger gains in M.c.f. sales
(b) larger gains in gross revenues
(c) larger gains in net operating revenues

than for companies spending below average.

2. The larger gains in net operating revenues were obtained after absorbing the much larger New Business expense per customer.

3. All M.c.f. and gross revenue gains are annual and should continue for a minimum of 10 years—based upon the report covering the revenue life of appliances.

Recommendations

1. To show greater-than-average gains in M.c.f. sales, gross revenues, and net operating revenues, a company should spend above average on New Business per total customer per year.

2. The gains in M.c.f., revenues, and net operating revenues vary to some extent due to the efficiency of sales organizations. A company should therefore, plan well for the selection and training of salesmen for the post-war period.

3. A company should prepare a similar study on its own property.

Displacement Meters

(Continued from page 49)

tate the veedor counter the correct amount each time.

4. End of one of the gear shafts wearing off causing the driving mechanism for the cycle hand to stop.

5. A careless chart changer who tears a little place on the edge of the chart and this catches in one of the guides causing the chart to wad up in a ball spoiling it for taking off the average pressure.

6. A careless chart changer who puts in too much ink which runs down on the pen arms and eats them off.

7. Moving the pressure and cycle pen arm when chart is changed, and not noticing this before he leaves. This is probably due to the chart changer being in a hurry.

8. Clocks that run too slow or too fast.

This may not be all of the ills but are the ones most likely to occur and can be picked up and repaired.

The one which takes time to find is the worn clutch which does not slow up on every stroke it makes, and will have to be watched for sometime to detect it.

When either of the counters or clutch sticks or causes trouble it is better to remove them and send them in to the manufacturer for repair, and install a new one, as it saves time and money.

It is advantageous to both the company and the customer to check the four and eight ounce reading with the corrected gauge reading at intervals to insure correct registration.

When installing the pressure cam in the gauges it is helpful to make a jig in order to keep the angularity of the cam, lever arm, and counter balances the same as the old setting.

Conclusions

In summing up the preceding pages, one conclusion can be drawn —In order to receive the best results for both the company and the customer, be complete and accurate in all tests, and at the same time do it as quickly as possible to keep the cost per unit at a low figure. Keep all testing equipment in good condition and make regular tests on test gauges, thermometers, stop watches, and barometers, being satisfied that they are correct and in good working order.

Gas Law Suits

(Continued from page 29)

mony is *inadmissible* to explain or alter the terms of a written instrument.

In Hope Natural Gas Company v. Reynolds, 30 S. E. (2d) 336, reported August, 1944, the litigation involved a deed for real property. One of the litigants attempted to introduce testimony of certain oral declarations made before execution of the deed. The higher court refused to permit the testimony to be given and said:

"Being of the opinion that there was no latent ambiguity in the language of the deed, we believe that all testimony as to oral declarations or statements concerning the interest thereby intended to be conveyed which proceeded in executing should have been excluded."

It is important to know that this law is applicable not only to deeds, but to all written contracts.

Book Review

Setting Up and Operating A Welding Business, published by The James F. Lincoln Arc Welding Foundation, Cleveland 1, Ohio, 100 pages, paper cover, size 5¾" x 8½".

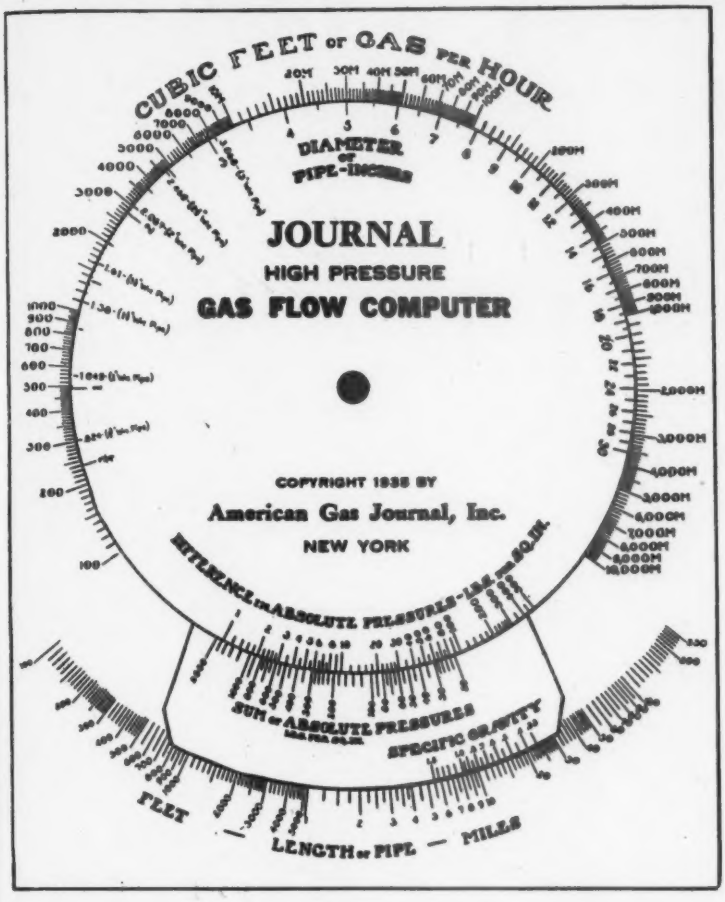
The material contains many helpful suggestions for the person contemplating the operation of a welding business, and consists of three award-winning studies from Foundation award programs.

The first study is on developing and conducting a commercial welding or job shop, and covers plant layout, design and equipment, location of equipment, equipment needed, and the application of hard-facing metals, cost accounting systems, etc.

The second study is on the organization of garage or service station for arc welding and shows a floor plan for station. It enumerates the various kinds of appliances, machinery and miscellaneous work that can be serviced in such a station, and lists the welding equipment necessary to take care of the classifications of welding listed.

The third study tells how to use the arc to increase business in the garage, and illustrates and describes many intricate welding jobs that can be handled in a well equipped garage.

"Journal" Gas Flow Computers



These Improved Gas Flow Computers are available in durable celluloid, encased in a convenient leatherette cover with complete instructions.

Actual Size 6¼ x 7½

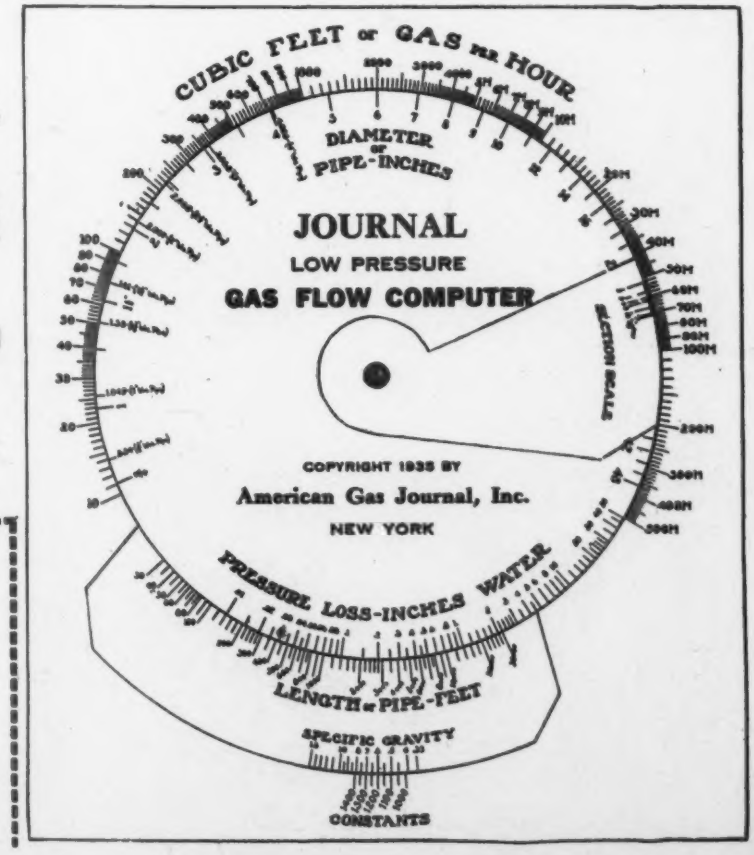
High Pressure Computer Range:

Cu. Ft. of Gas Per Hour—100-10,000 M
Diameter of Pipe Inches ¾-30
Difference in Absolute Pressure—Lbs. per sq. in. 1-500
Sum of Absolute Pressures—Lbs. per sq. in. 2000-20
Specific Gravity 1.5-.35
Length of Pipe—Feet 100-5000
Length of Pipe—Miles 1-250

Low Pressure Computer Range:

Cu. Ft. of Gas Per Hour—10 to 500 M
Pipe Diameter ¾" to 48" (including standard and actual weight up to 4")
Pressure Loss Inches .01-10.
Length of Pipe—Feet 30-30,000
Specific Gravity 1.5-.35
Constants 1400-1000

Price $3.50 Each, Postage Prepaid



AMERICAN GAS JOURNAL
53 Park Place, New York 7, N. Y.

Please enter our order for Computers as follows at $3.50 each, postage prepaid

....HIGH Pressure Computer

....LOW Pressure Computer

NAME .....

ADDRESS .....

meters and regulators

INDIVIDUAL OR COMBINATION UNITS

CARNEGIE LIBRARY
JAN 18 1945
OF PITTSBURGH

Not a ... but an actuality

THE SPRAGUE METER CO. BRIDGEPORT, CON

DAVENPORT, IOWA • LOS ANGELES, CALIF. • HOUSTON, TEXAS • SAN FRANCISCO